UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Processed Strong-Motion Records from the Coalinga, California, Aftershock on July 9, 1983 0740 UTC

by

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Open-File Report 85-584

U.S. GEOLOGICAL SURVEY, MENLO PARK,

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Any use of trade names is for descriptive purposes only and does not imply endorsement by the USGS.

CONTENTS

Page

Introduction.....1

Processed records from the Coalinga, California, aftershock on July 9, 1983, 0740 UTC.....2

Station Data.....3

Digitization and Processing.....4

References.....8

Tables

1. Source data and processed records.....9
2. Trigger times.....10
3. Scaled peak accelerations (May 2 - Sept. 11, 1983).....11

Figures

1. Instrument stations and earthquake epicenter.....14
2. Copies of original records.....15
3. 360° component of Skunk Hollow, Palmer Avenue and Burnett Construction Stations.....20

Appendices

Appendix I - Computer Plots.....21
Appendix II - Current list of processed records.....166

CONTENTS (Continued)

Station and Component Directions	Page No. for plots of six processing steps* 1	2	3	4	5	6
Anticline Ridge (Freefield) 360, Up, 270	22	31	58	85	112	139
Anticline Ridge (Pad Site) 360, Up, 270	23	34	61	88	115	142
Burnett Construction 360, Up, 270	24	37	64	91	118	145
Oil City 360, Up, 270	25	40	67	94	121	148
Oil Fields, Fire Station (Freefield) 360, Up, 270	26	43	70	97	124	151
Oil Fields, Fire Station (Pad) 360, Up, 270	27	46	73	100	127	154
Palmer Avenue 360, Up, 270	28	49	76	103	130	157
Skunk Hollow 360, Up, 270	29	52	79	106	133	160
Transmitter Hill 360, Up, 270	30	55	82	109	136	163

* Processing stages and plot format:

1) Uncorrected accelerogram
2) Corrected acceleration, velocity, displacement
3) Relative velocity response spectrum, linear plot
4) Response spectrum, tripartite log plot
5) Fourier amplitude spectrum, linear plot
6) Fourier spectrum, log-log plot

In column 1 each plot contains all three components. In columns 2 through 6, the indicated page number refers to the first of three components for this record.

INTRODUCTION

The M_L 6.5 Coalinga, California earthquake of 2 May 1983, 2342 UTC, was followed by many aftershocks, 46 of which triggered stations both within the permanent network maintained by the U.S. Geological Survey and the temporary network installed within a few days after the main shock. Significant aftershocks occurred for a period of four months. Data in this report are from the M_L 5.3 event on July 9, 1983, 0740 UTC, located approximately 13 km northwest of Coalinga.

PROCESSED RECORDS FROM THE COALINGA, CALIFORNIA AFTERSHOCK on July 9, 1983, 0740 UTC

Earthquake Data.

The main shock of the M_L = 6.5 Coalinga, California, earthquake occurred on 2 May 1983, 2342 UTC, 10 km northeast of Coalinga at a depth of 10 km. It triggered 37 U.S. National Strong-Motion Network accelerographs operated by the U.S. Geological Survey (USGS) and 60 accelerographs operated by the California Strong-Motion Instrumentation Program (CSMIP). The two closest records were obtained at the Bureau of Reclamation's Pleasant Valley Pump Plant, 9.2 km from the epicenter. Peak horizontal ground-level accelerations reached 0.54 g at the Switchyard accelerograph site.

Several reports have been published on the main shock and the aftershock sequence, including Borcherdt, 1983; Bennett and Sherburne, 1983; and Scholl and Stratta, 1984. These reports contain contributions from many authors, primarily from within the USGS, CDMG, and the Earthquake Engineering Research Institute (EERI). Preliminary CDMG strong-motion data is presented in Shakal and McJunkin, 1983. Processed USGS strong-motion data consisting of computer plots of corrected time series and spectra are presented in Maley and others 1984, together with data from the May 9 aftershock. A magnetic tape containing the USGS digital data is available from National Geophysical Data Center (NGDC), National Oceanic and Atmospheric Administration (NOAA), Mail Stop E/GC11, Boulder, CO 80303.

Figure 1 shows the epicenter and the locations for those instruments that recorded the July 9, 1983, 0740 UTC aftershock (M_L 5.3). The epicenter was located approximately 13 km northwest of Coalinga.

Table 1 lists the source data for the aftershock.

Station Data.

Table 1 lists the coordinates of the stations. A brief description of each follows (see also Porcella, 1985).

Anticline Ridge. The accelerograph is bolted to an unused concrete pump pad at the top of a ridge about 50' above Shell Road.

Burnett Construction. The accelerograph is bolted to a large concrete pad, the base for a parking shelter, at 5th and Glenn in Coalinga, approximately one block southeast of the heavily damaged downtown area.

Oil City. The instrument is bolted to the pad of a garage-sized, light-weight, wood-frame bulding, located at Shell Oil's West Coalinga Unit Production Laboratory.

Oil Fields Fire Station. One accelerograph is bolted at the end of a long narrow pad used as a base for a light-weight hose-drying rack. A second accelerograph, located ten feet away on natural ground, is anchored by several bags of soil laid over the top of the unit and connected to the first for starting and WWVB radio signals. No particular scientific endeavor is represented by this anchoring system other than for comparison purposes with the nearby pad instrument.

Palmer Avenue. This instrument is bolted to a concrete pad formerly used as a derrick footing (according to an unidentified source at Union Oil).

Skunk Hollow. The accelerograph is bolted to an old pump pad whose pump had long since been removed.

Record Data.

Figure 2 contains reproductions of the original records from the July 9 aftershock. Before digitization and processing, the records were scaled for peak amplitudes, and the WWVB radio signals (when legible), were read for trigger time or time code generator (TCG) signal.

Table 2 lists the trigger times for records with a sufficiently legible time code. These times can be used to approximately ± 0.05 s, depending on the detailed behavior of the film getting up to operating speed. The plotted data in Appendix I, and the numerical data on the tape, begin at these times. The scaled peak values (0.05 g and greater) for the records from all the events in the Coalinga sequence are listed in Table 3.

Stations at the Pleasant Valley Pump Plant were not digitized because they were too small. For information on these records see Porcella, 1985.

Figure 3 shows the 360° component of the Skunk Hollow, Palmer Avenue, and Burnett Construction records. Their peak values occur on a distinctive pulse arriving later than the shear wave. The interval between shear wave arrival and this pulse is listed in the following:

Station	Time Interval	Epicentral Distance
Skunk Hollow	2 sec	8.9 km
Palmer Avenue	2.2 sec	10.7 km
Burnett Construction	3.8 sec	13.1 km

DIGITIZATION AND PROCESSING

Computer plots provide a visual description of the recorded accelerations and their processed results. They are reproduced in the Appendix. These plots may be used to measure specific earthquake characteristics or record parameters directly and to select records for further study using the digital data.

The current USGS steps for processing are:

1. A commercial digitizing firm (IOM-TOWILL in Santa Clara, California) digitizes the records on a trace-following, computer-controlled laser

scanner. The data is digitized at unequal time intervals, at an average of 600 samples per second.

2. If a strong-motion record has a duration longer than about 10 s, then it is divided into approximately 10-s segments, each segment being digitized separately. The segments are reassembled using specially inserted vertical lines; these lines mark the end and/or beginning of each segment. Each vertical line is digitized twice, once in each adjacent segment, and then used in reassembling the record.
3. The uncorrected data are prepared by subtracting the digitized reference traces from the data traces, and using the digitized time marks to determine the time scale. The instrument sensitivities scale the ordinates to acceleration.
4. The data are passed through a correction algorithm that applies a high-frequency filter (50 Hz), instrument correction, and base-line correction in the form of a low-frequency filter (bi-directional Butterworth, 0.4 Hz, order 4), and decimation to 200 sps. Plots of the corrected acceleration, velocity, and displacement for the three components of each record are included.
5. The maximum relative velocity (RV) response spectra are calculated for damping values of 0, 2, 5, 10, and 20 percent of critical. These response spectra are calculated for a period range starting at 0.04 s and ending with the period corresponding to the low-frequency filter limit used in the base-line algorithm. The dashed curve on this plot is the unsmoothed Fourier amplitude spectrum, FAS, calculated at the same periods as the RV response spectra.

   The second response spectrum plot is that of the pseudo-velocity response spectra, PSRV, calculated for the same five damping values used

in calculating the RV response spectra. This tripartite plot also has the values for the maximum relative displacement (RD) response spectrum as well as the pseudo-absolute acceleration spectrum (PSAA).

6. Fourier amplitude spectra, calculated by FFT, are presented on linear and log-log axes to accent the particular characteristics at each end of the spectrum.

Initial selection of filters for Step 4 are based on the convention of retaining a period content somewhat longer than the strong-motion duration of the records. The final Butterworth filter parameters are chosen to eliminate any apparent serious noise content in the calculated displacements.

The digital data from which these plots are produced are available on tape from the National Geophysical Data Center (NGDC), NOAA, Mail Stop E/GC11, 325 Broadway, Boulder, Colorado 80303.

For a more complete description of the processing method see: Converse, A., 1984.

A summary of the peak values of acceleration, velocity, and displacement for the records from the aftershock of July 9 is included in Table 1.

Justification for the selection of 2.5 seconds for the long-period cut-off in Step 4 above rests on the following observations:

1. The strong-motion duration of the records closest to the epicenter is about 2 to 2-1/2 seconds and retaining-signal content somewhat longer than this is useful. This implies the rupture lasted this long and that the Fourier content with longest period would also have this period. For an accurate determination of the signal at this longest expected period, we choose, initially, a long-period cut-off of twice the rupture duration.
2. The digitized duration is approximately 20 seconds and the longest periods retained should not be more than 1/4 or 1/2 of this.

3. Comparison of the displacement plots of the two records at Oil Fields Fire Station (the pad and the free-field) indicate that for all 3 components the corresponding displacements are very close. Dissimilar displacements were noted in a preliminary choice of 5 seconds where a 3-second noise was clearly evident during the first 5 to 10 seconds. For comparison with aftershock of July 22, 1983, 0239 UTC, see *U.S. Geological Survey Open-File Report 85-250*.

Computer Plots

Appendix I contains computer plots for the following processing stages:

Uncorrected accelerogram.

Corrected acceleration velocity and displacement.

Relative velocity response spectrum, linear plot.

Response spectrum, tripartite log plot.

Fourier amplitude spectrum, linear plot.

Fourier spectrum, log plot.

REFERENCES

Bennett, J.H., and Sherburne R.W. (editors), 1983, The 1983 Coalinga, California, earthquakes: California Division of Mines and Geology, *Special Publication 66*, 335 p.

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Converse, A.M., 1985, AGRAM: A Series of Computer Programs for Processing Digitized Strong-Motion Accelerograms, Version 2.0: *U.S. Geological Survey Open-File Report 81-525*, 118 p.

Maley, R.P., Etheredge, E., Johnson, D., Switzer, J., Mork, P., and Brady, G., 1984, Strong-motion data recorded near Coalinga, California (May 2, 1983) and processed data from May 2 and May 9, 1983: *U.S. Geological Survey Open-File Report 84-626*, 258 p.

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Scholl, R.E., and Stratta, J.L. (editors), 1984, Coalinga, California, Earthquake of May 2, 1983: Earthquake Engineering Research Institute, *Reconnaissance Report*, 300 p.

Shakal, A.F., and McJunkin, R.D., 1983, Preliminary Summary of CDMG strong-motion records from the 2 May 1983 Coalinga, California, earthquake: *CDMG Office of Strong Motion Studies Report, OSMS 83-5.2*, 49 p.

Table 1. Source Data and Processed Records

Earthquake Source Data	Station	Coordinates	Distances (Km) Epi	Distances (Km) Hypo	Components	Peak Acceleration Scaled (g)	Peak Acceleration Digitized (cm/s^2)	Corrected Peak Motion Accel. (cm/s^2)	Corrected Peak Motion Vel. (cm/s)	Corrected Peak Motion Disp. (cm)
Coalinga 9 July 1983 0740:51.30 UTC	Coalinga; Anticline Ridge Free Field	36.233° N. 120.333° W.	6	11	360 Up 270	.28 .12 .39	266.19 112.43 -373.67	264.13 -114.16 -371.29	- 8.23 3.51 -15.56	-0.44 -0.37 1.29
Epicenter: 36°15.04' N. 120.24.01' W.	Coalinga; Anticline Ridge Pad Site	36.233° N. 120.333° W.	6	11	360 Up 270	.24 .11 .42	251.53 -123.20 -412.13	249.16 -118.07 -410.73	- 8.90 - 4.36 -15.11	-0.61 -0.37 1.20
Depth 9.02 km	Coalinga; Burnett Construction	36.138 N. 120.357° W.	13	16	360 Up 270	.14 .08 .10	138.05 - 77.11 103.64	137.91 - 75.86 -104.38	8.19 3.10 7.41	0.53 0.33 0.49
Mag. 5.3	Coalinga; Oil City	36.229° N. 120.360° W.	4	10	360 Up 270	.37 .21 .38	-362.98 -206.87 -370.74	-368.95 -201.43 -364.89	10.26 5.37 12.77	-0.72 0.38 1.14
	Coalinga; Oil Fields Fire Station Freefield	36.247° N. 120.314° W.	8	12	360 Up 270	.09 .07 .09	- 96.47 - 58.21 - 90.55	- 94.30 - 57.95 - 88.54	- 4.36 1.85 3.36	-0.27 0.13 0.32
	Coalinga; Oil Fields Fire Station Pad	36.247° N. 120.314° W.	8	12	360 Up 270	.09 .07 .09	-100.61 - 74.17 - 92.49	-100.08 - 70.98 - 93.36	- 4.26 2.11 3.70	-0.27 0.17 0.33
	Coalinga; Palmer Avenue	36.209° N. 120.292° W.	11	14	360 Up 270	.20 .07 .12	192.58 78.55 -112.13	191.03 77.03 -109.78	5.82 - 1.81 - 3.16	-0.43 -0.14 0.24
	Coalinga; Skunk Hollow	36.275° N. 120.306° W.	9	13	360 Up 270	.14 .15 .17	-143.25 170.89 173.34	-144.31 183.05 181.60	5.17 4.01 - 6.93	0.40 0.36 -0.34
	Coalinga; Transmitter Hill	36.249° N. 120.343° W.	5	10	360 Up 270	.19 .12 .20	174.75 -108.98 -189.43	178.21 -107.33 -187.89	- 9.46 3.10 10.31	-0.90 0.39 1.36

TABLE 2. TRIGGER TIMES

Origin time	0740:51.30
Oil City	0740:53.8
Transmitter Hill	0740:54.1
Palmer Avenue	0740:54.5
Burnett Construction	0740:55.3
Oil Fields Fire Station, Oil Fields	
Free-field and pad	0740:54.1

Table 3. Scaled peak accelerations (in g) for all records, May 2, 1983 to September 11, 1983

	Coalinga									Pleasant Valley Pump Plant				
	Anticline Ridge Free-Field	Anticline Ridge Pad	Burnett Construction	Oil City	Oil Fields Free-Field	Oil Fields Pad	Palmer Avenue	Skunk Hollow	Transmitter Hill	Free-Field	Switchyard	Basement	1st Floor	Roof
2 May 83 2342 UTC	—	—	—	—	—	—	—	—	—	—	0.54 .38 .46	0.28 .22 .31	—	—
2 May 83 2343 UTC	—	—	—	—	—	—	—	—	—	—	—	<.05	—	—
2 May 83 2344 UTC	—	—	—	—	—	—	—	—	—	—	—	<.05	—	—
2 May 83 2345:23 UTC	—	—	—	—	—	—	—	—	—	—	—	<.05	—	—
2 May 83 2345:50 UTC	—	—	—	—	—	—	—	—	—	—	—	<.05	—	—
2 May 83 2346 UTC	—	—	—	—	—	—	—	—	—	—	—	.05 .09 .06	—	—
2 May 83 2347:13 UTC	—	—	—	—	—	—	—	—	—	—	—	<.05	—	—
2 May 83 2348 UTC	—	—	—	—	—	—	—	—	—	—	—	<.05	—	—
4 May 83 0728 UTC	—	—	—	—	—	—	—	0.05 .10 .04	—	—	.07 .08 .26	.05 .05 .17	0.04 .04 .16	0.08 .07 .44
4 May 83 0739 UTC	—	—	—	—	—	—	—	<.05	—	—	.03 .03 .07	<.05	<.05	<.05
4 May 83 1611 UTC	—	—	—	—	—	—	—	<.05	—	—	.04 .05 .10	<.05	<.05	<.05
5 May 83 1020 UTC	—	—	—	—	—	—	—	—	—	—	.05 .03 .11	.02 .02 .06	.02 .02 .06	.06 .03 .16
5 May 83 1133 UTC	—	—	—	—	—	—	—	—	—	—	<.05	<.05	<.05	<.05
5 May 83 1242 UTC	—	—	<0.05	—	—	—	—	—	—	—	—	—	—	—
6 May 83 1151 UTC	<0.05	—	—	—	—	—	—	—	—	—	—	—	—	—
7 May 83 0017 UTC	0.05 .02 .08	0.07 .02 .08	—	—	0.10 .02 .07	—	0.04 .04 .06	—	—	—	—	—	—	—
7 May 83 0544 UTC	<.05	<.05	—	—	—	—	.02 .02 .06	—	—	—	—	—	—	—

Table 3. (Continued) Scaled peak accelerations (in g) for all records, May 2, 1983 to September 11, 1983

	Coalinga									Pleasant Valley Pump Plant				
	Anticline Ridge Free-field	Anticline Ridge Pad	Burnett Construction	Oil City	Oil Fields Free-field	Oil Fields Pad	Palmer Avenue	Skunk Hollow	Transmitter Hill	Free-field	Switchyard	Basement	1st Floor	Roof
9 May 83 0249 UTC	0.56 .30 .56	0.48 .37 .47	0.09 .07 .08	0.30 .10 .24	0.18 .16 .25	—	0.26 .10 .22	0.12 .12 .15	—	—	0.22 .11 .10	0.14 .04 .05	0.13 .05 .06	0.23 .06 .24
9 May 83 0326 UTC	.05 .02 .08	.05 .02 .10	<.05	.06 .02 .07	.07 .04 .06	—	.06 .06 .07	—	—	—	—	—	—	<.05
9 May 83 0331 UTC	—	—	—	<.05	—	—	—	—	—	—	—	—	—	—
10 May 83 1326 UTC	—	—	—	—	—	—	—	—	—	—	—	—	—	<.05
10 May 83 1425	—	—	—	—	—	—	—	—	—	—	—	—	—	<.05
10 May 83 2153 UTC	—	—	—	—	—	—	—	—	—	—	—	—	—	<.05
11 May 83 2049 UTC	.08 .02 .13	.08 .02 .13	—	—	.09 .01 .04	—	—	—	—	—	—	—	—	—
12 May 83 1341:08 UTC	—	—	.05 .03 .04	—	<.05	—	.14 .13 .10	—	—	—	—	—	—	—
14 May 83 0502 UTC	.06 <.05 .11	.08 .07 .07	—	<.05	.08 .02 .07	—	.07 .06 .10	—	—	—	<.05 <.05 .11	<.05	<.05 <.05 .05	.05 .02 .13
18 May 83 0246:52 UTC	—	—	—	—	—	—	<.05	—	—	—	—	—	—	—
18 May 83 2039 UTC	<.05	<.05	—	—	<.05	—	<.05	—	—	—	—	—	—	—
24 May 83 0902 UTC	.44 .34 .74	.30 .35 .66	.05 .05 .07	.22 .10 .14	.50 .12 .35	.49 .10 .32	.14 .07 .08	.06 .08 .10		.04 .05 .09	.07 .09 .11	.05 .04 .06	.04 .04 .07	.08 .04 .22
24 May 83 0904 UTC	—	—	—	—	—	—	—	—	—	<.05	<.05	—	—	—
30 May 83 0321 UTC	—	—	—	—	<.05	<.05	—	—	—	—	—	—	—	—
11 June 83 0309 UTC	.06 .02 .06	<.05	.20 .07 .14	.09 .09 .09	<.05	<.05	—	—	.06 .04 .06	<.05	.04 .02 .05	<.05	<.05	.04 .03 .14
12 June 83 0131 UTC	—	—	.07 .02 .08	—	.06 .02 .03	.07 .01 .02	.05 .04 .06	—	—	—	—	—	—	—

page 14 follows

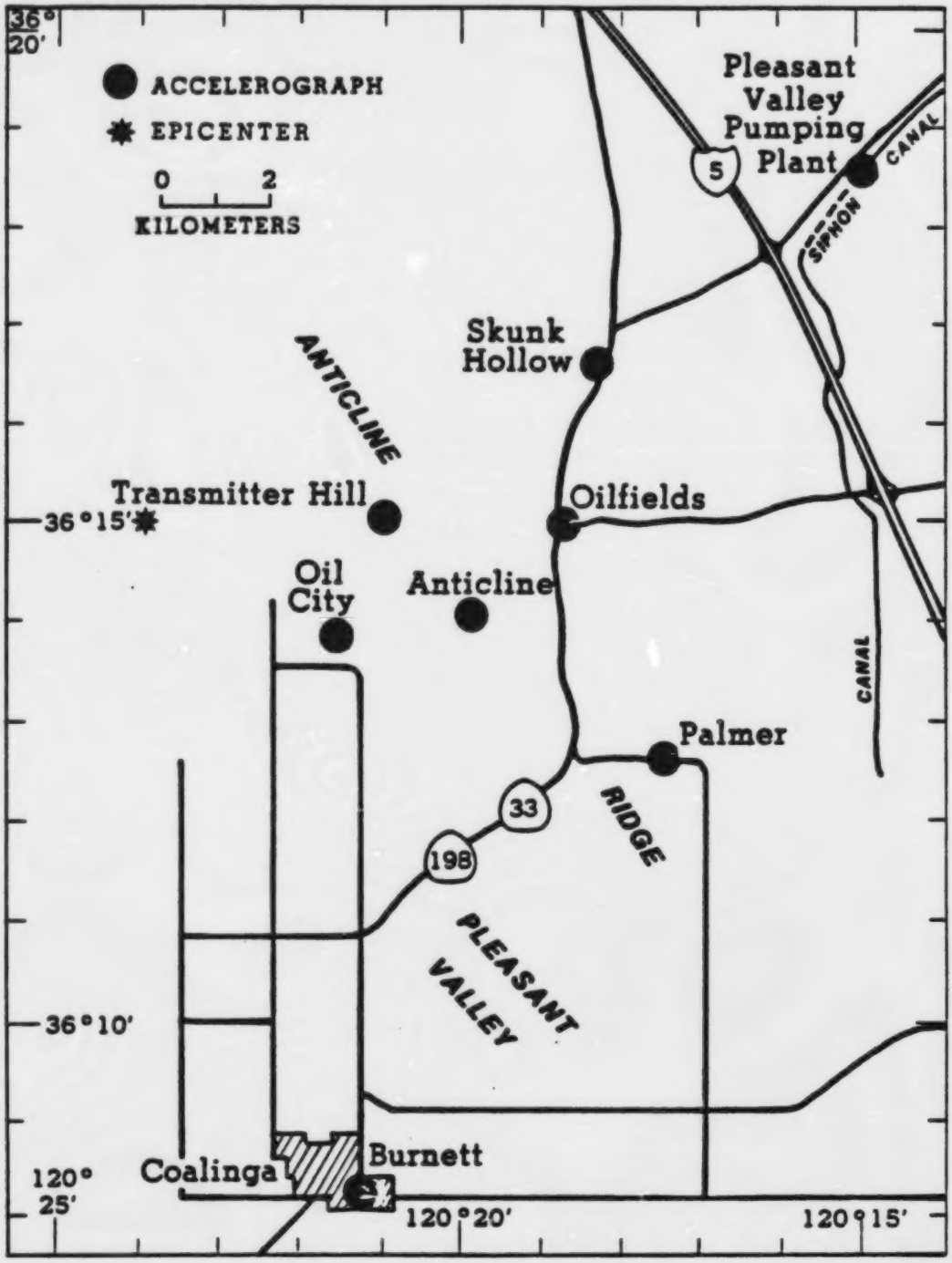


Figure 1. Instrument stations and earthquake epicenter.

COALINGA

9 JULY 1983 0740 UTC

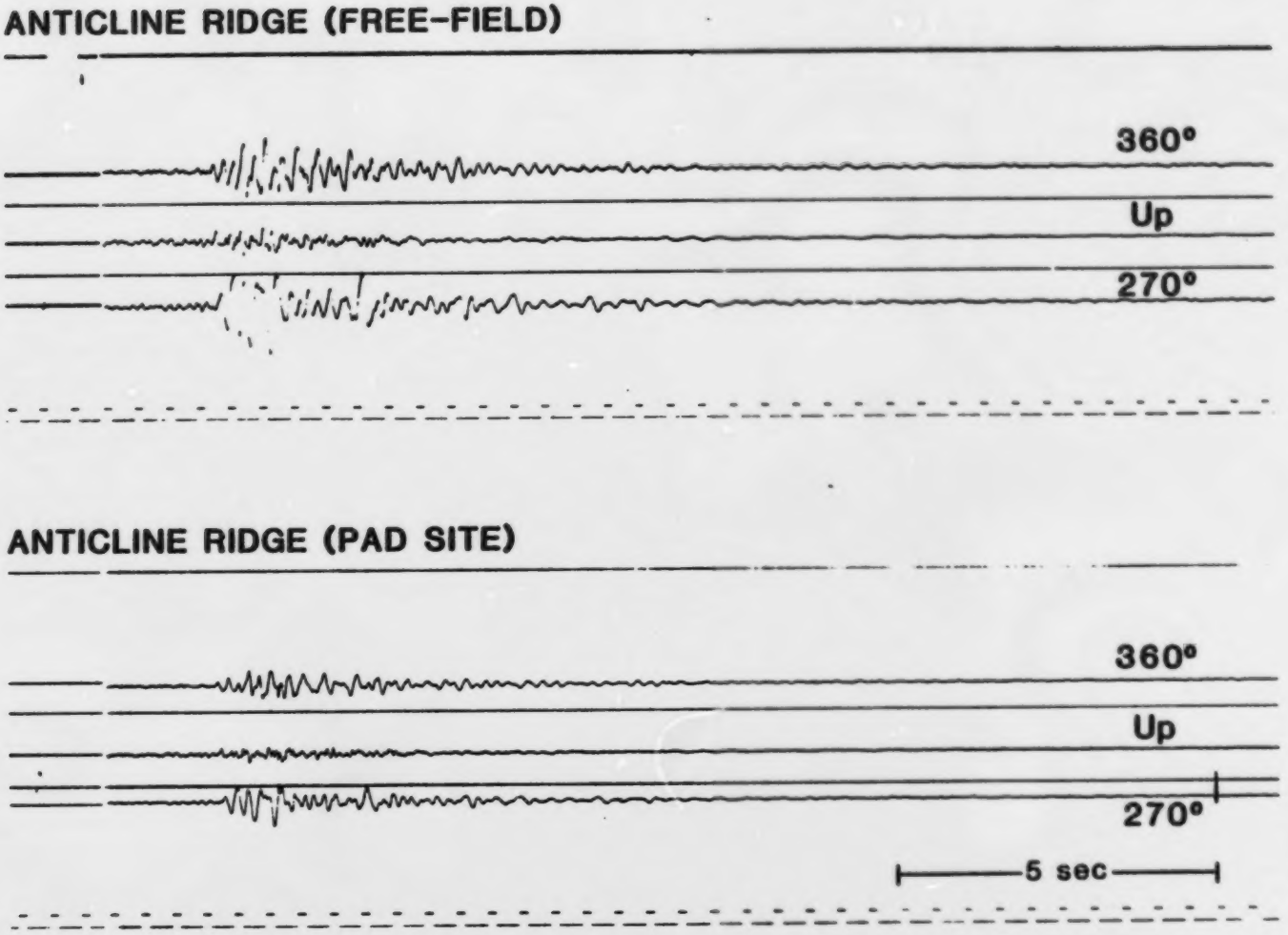


Figure 2. Copies of original records.

COALINGA
9 JULY 1983 0740 UTC

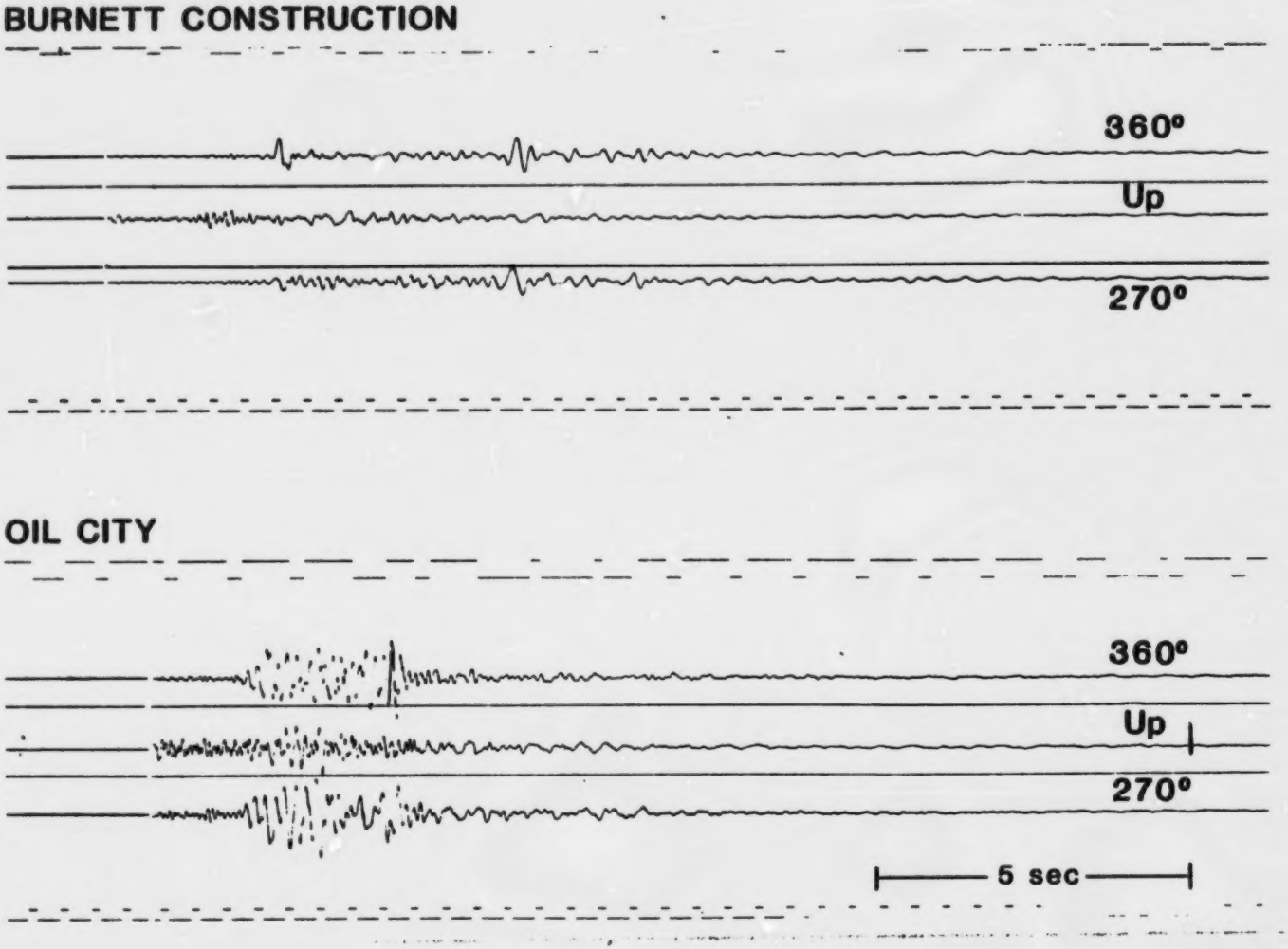


Figure 2. (Continued).

COALINGA

9 JULY 1983 0740 UTC

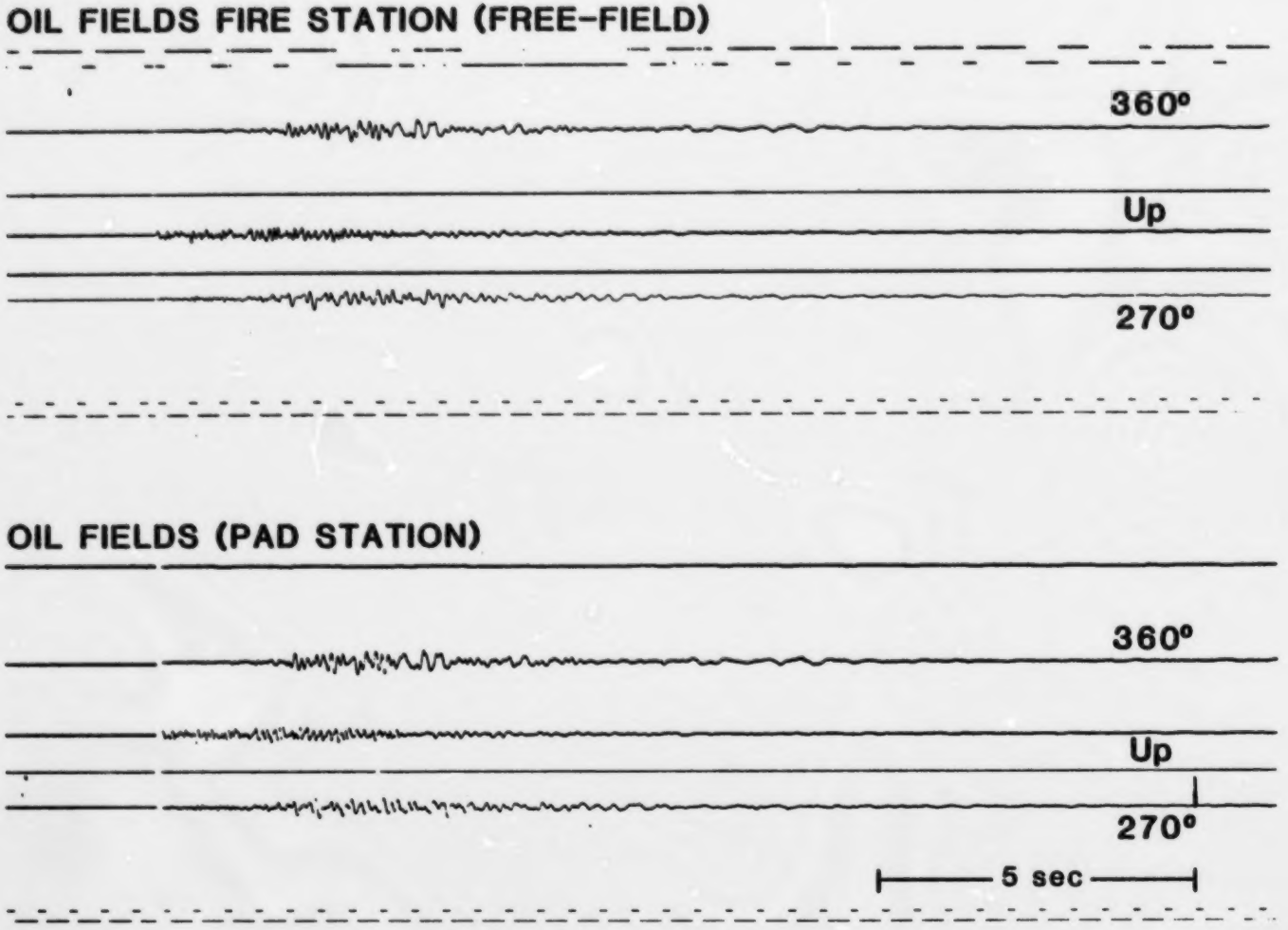


Figure 2. (Continued).

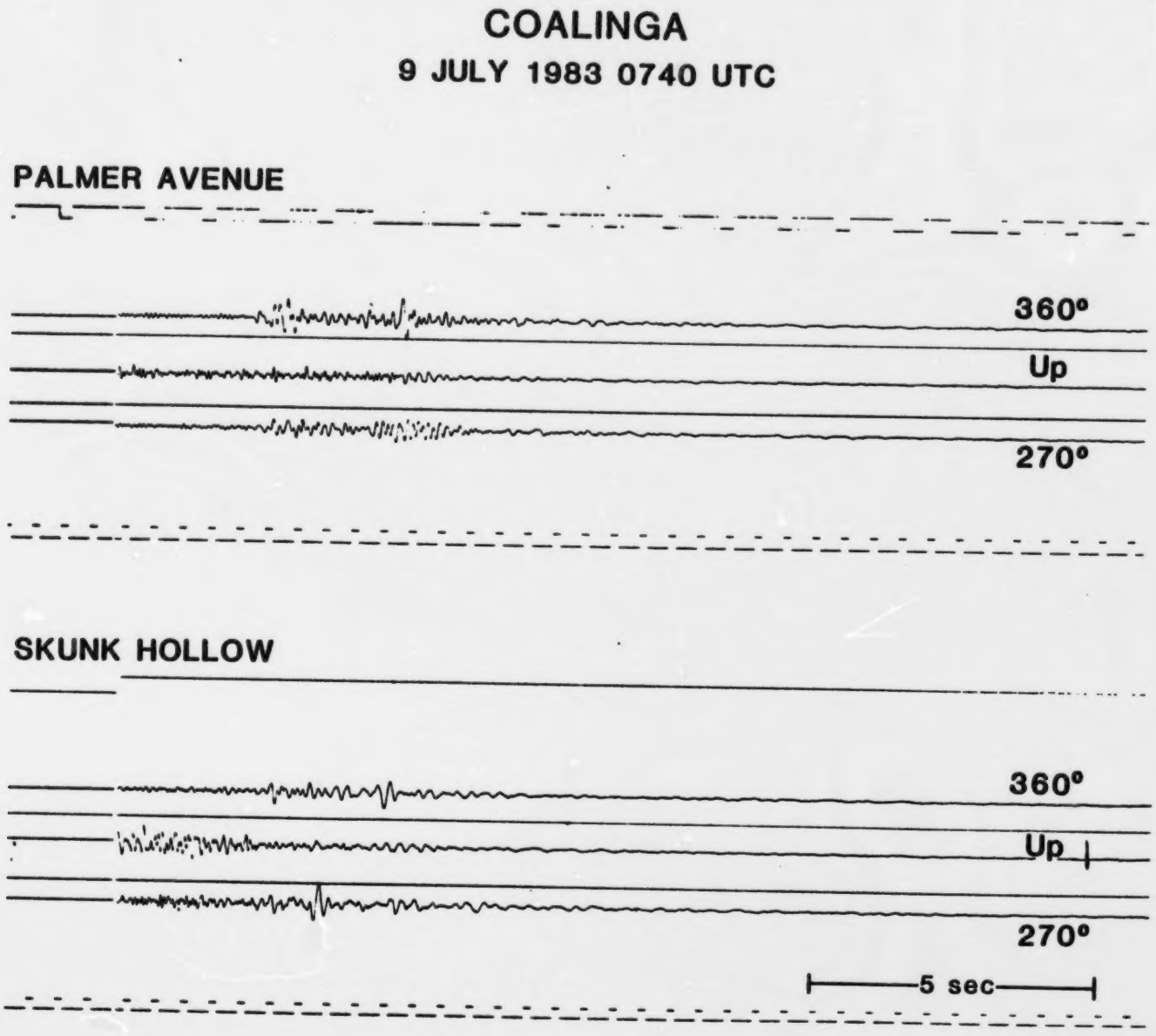


Figure 2. (Continued).

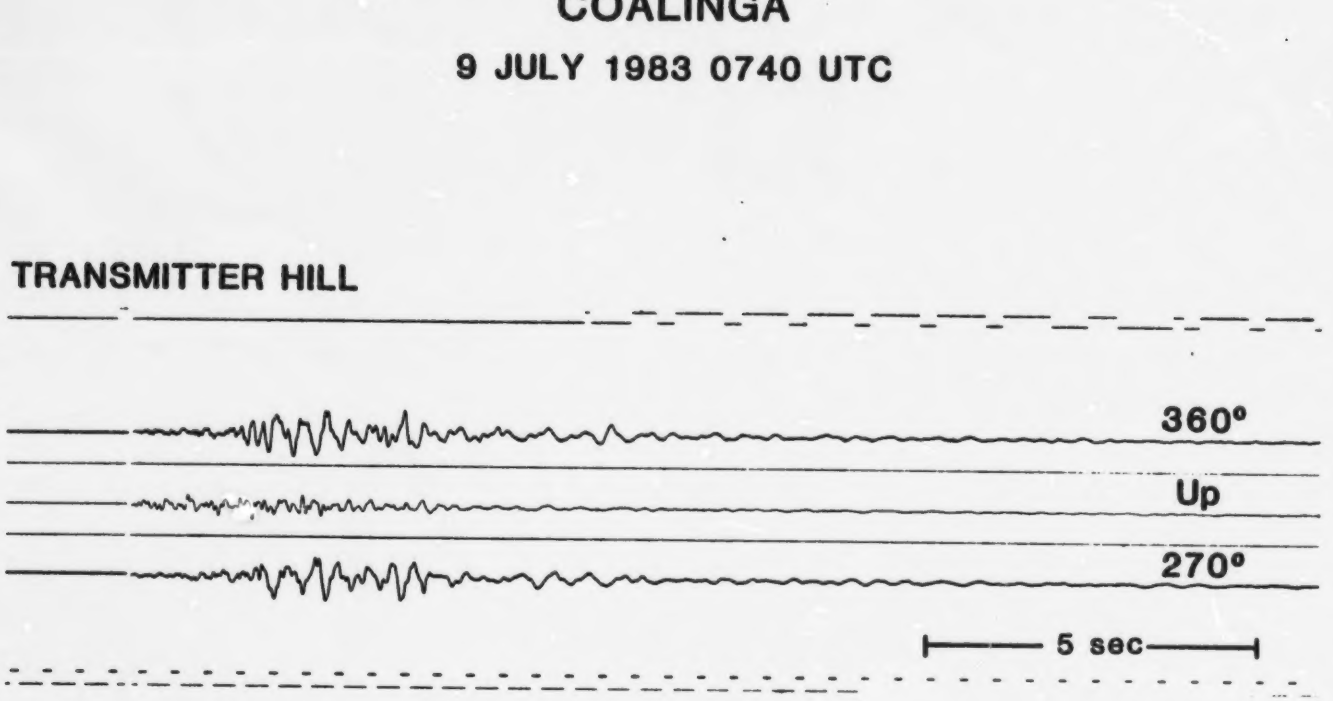


Figure 2. (Continued).

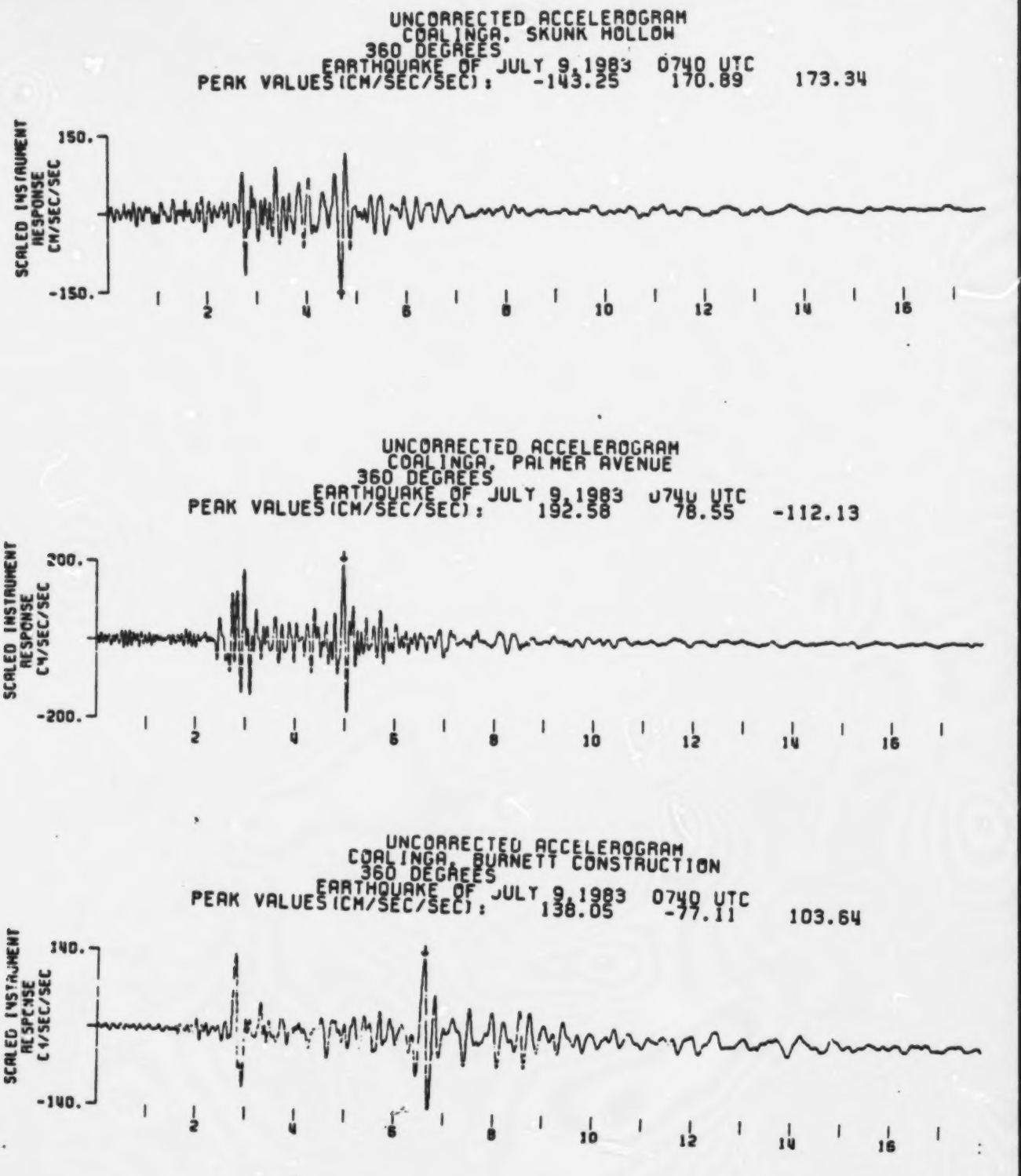


Figure 3. 360° component of Skunk Hollow, Palmer Avenue, and Burnett Construction Station 5.

APPENDIX I

COMPUTER PLOTS

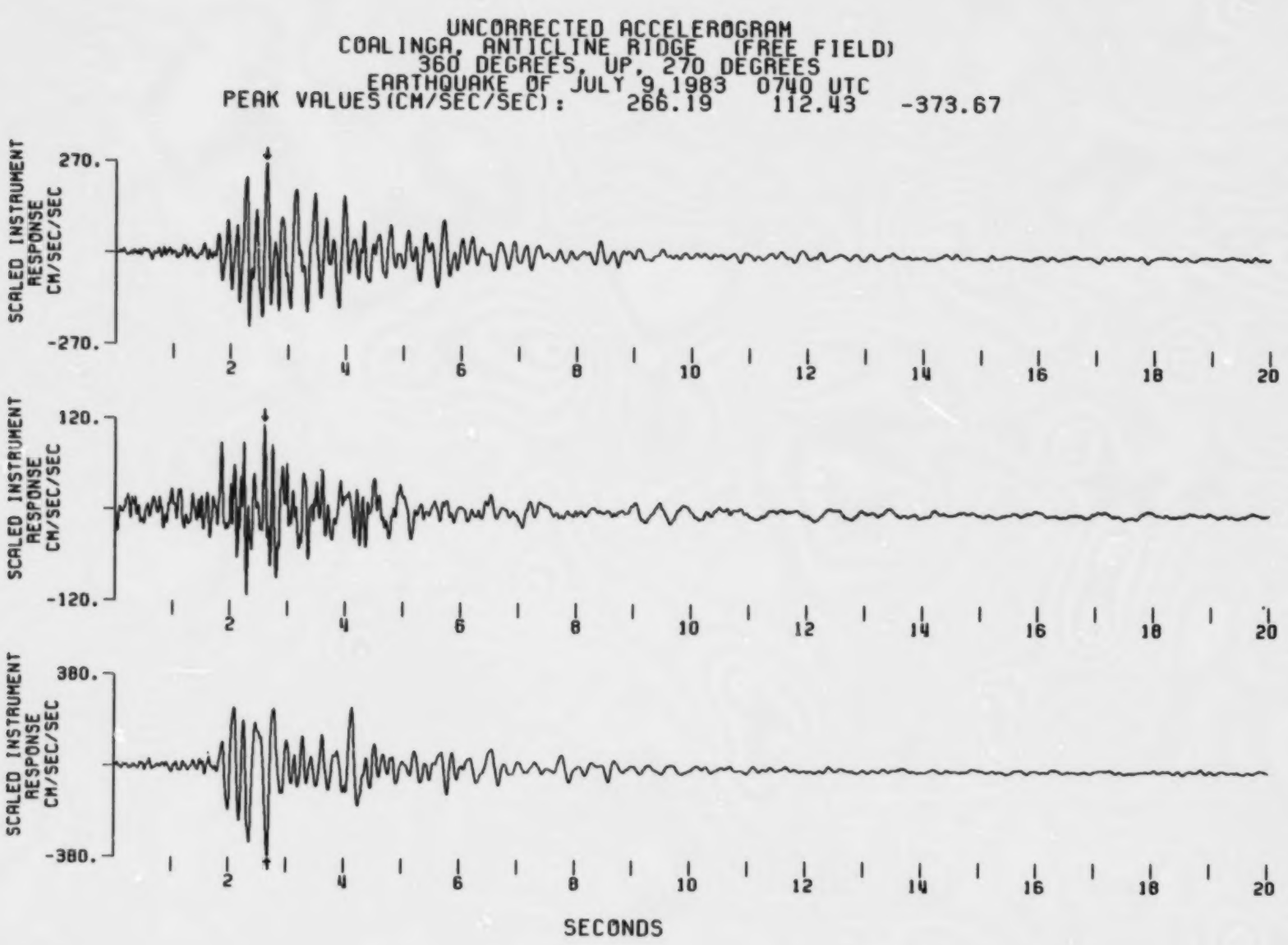
Uncorrected acceleration

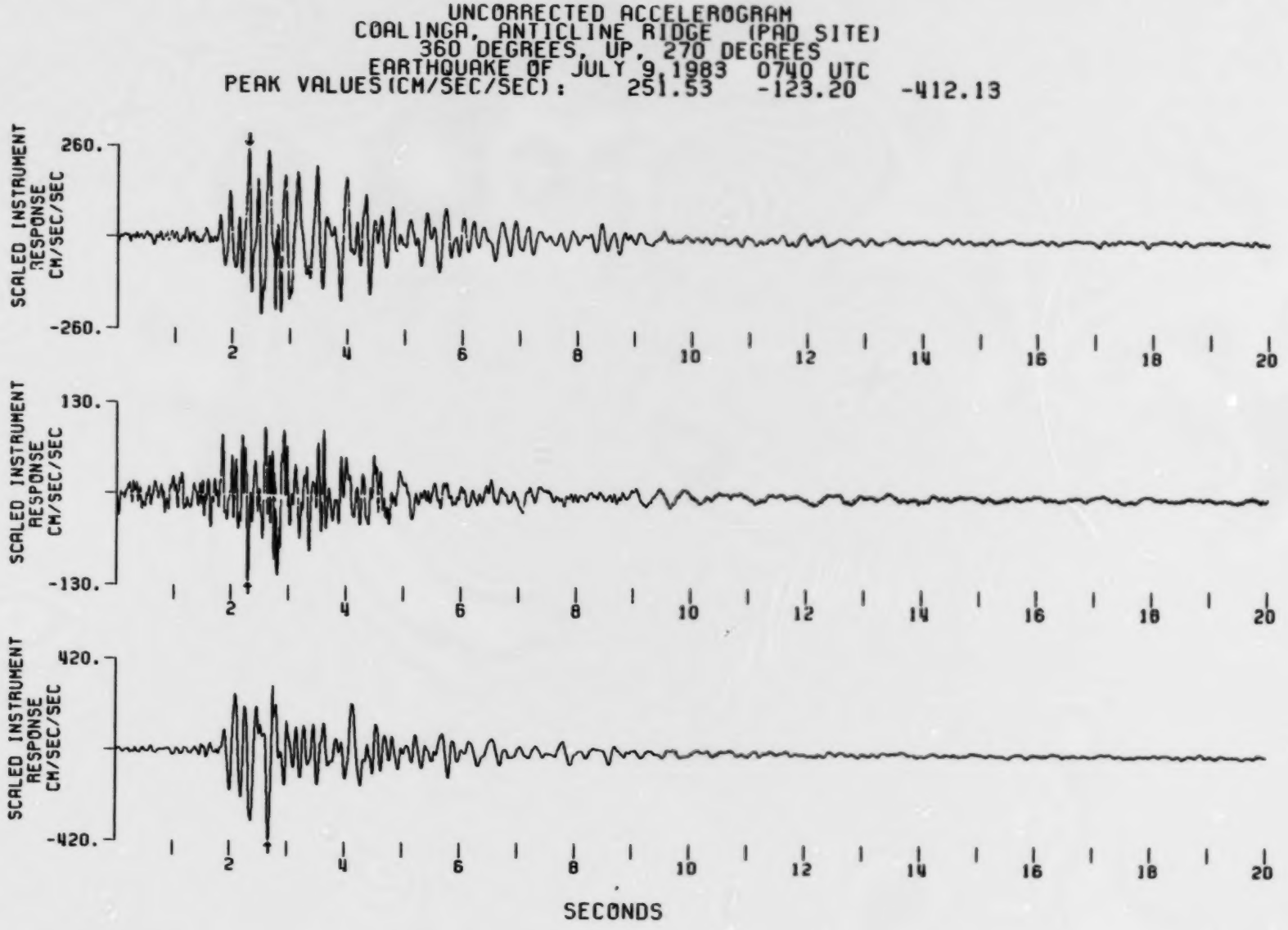
Corrected acceleration, velocity and displacement

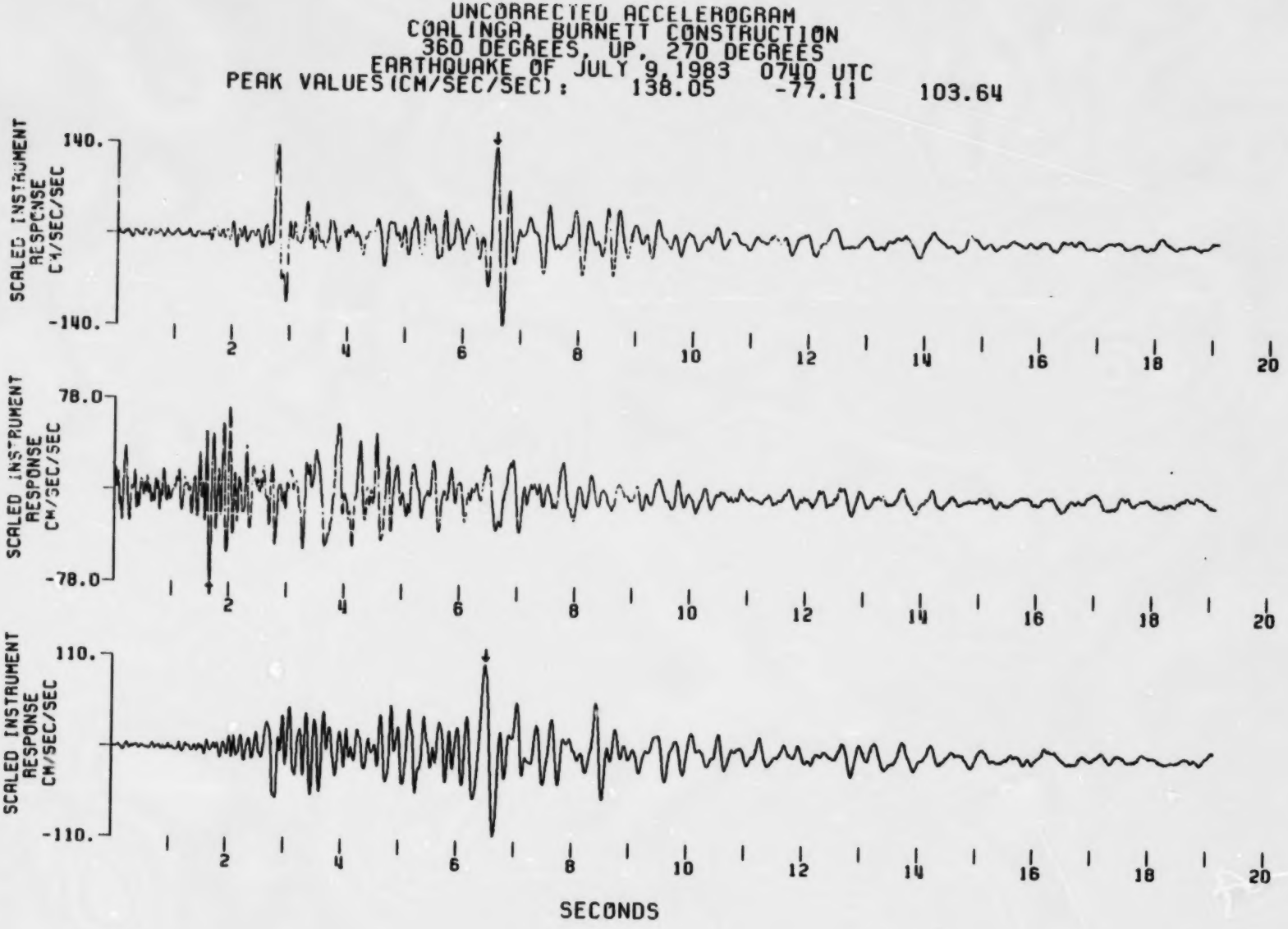
Response spectra

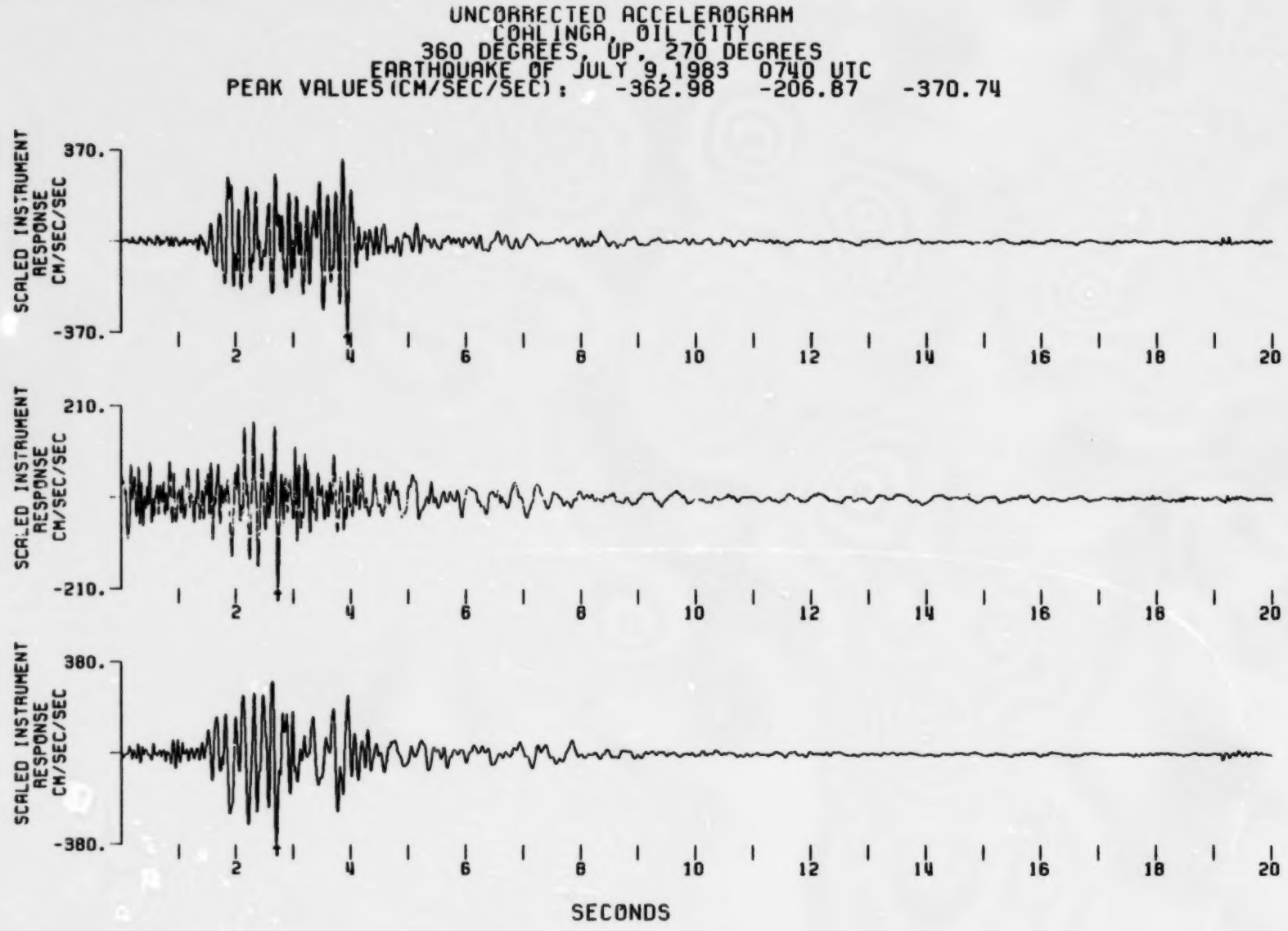
Fourier spectra

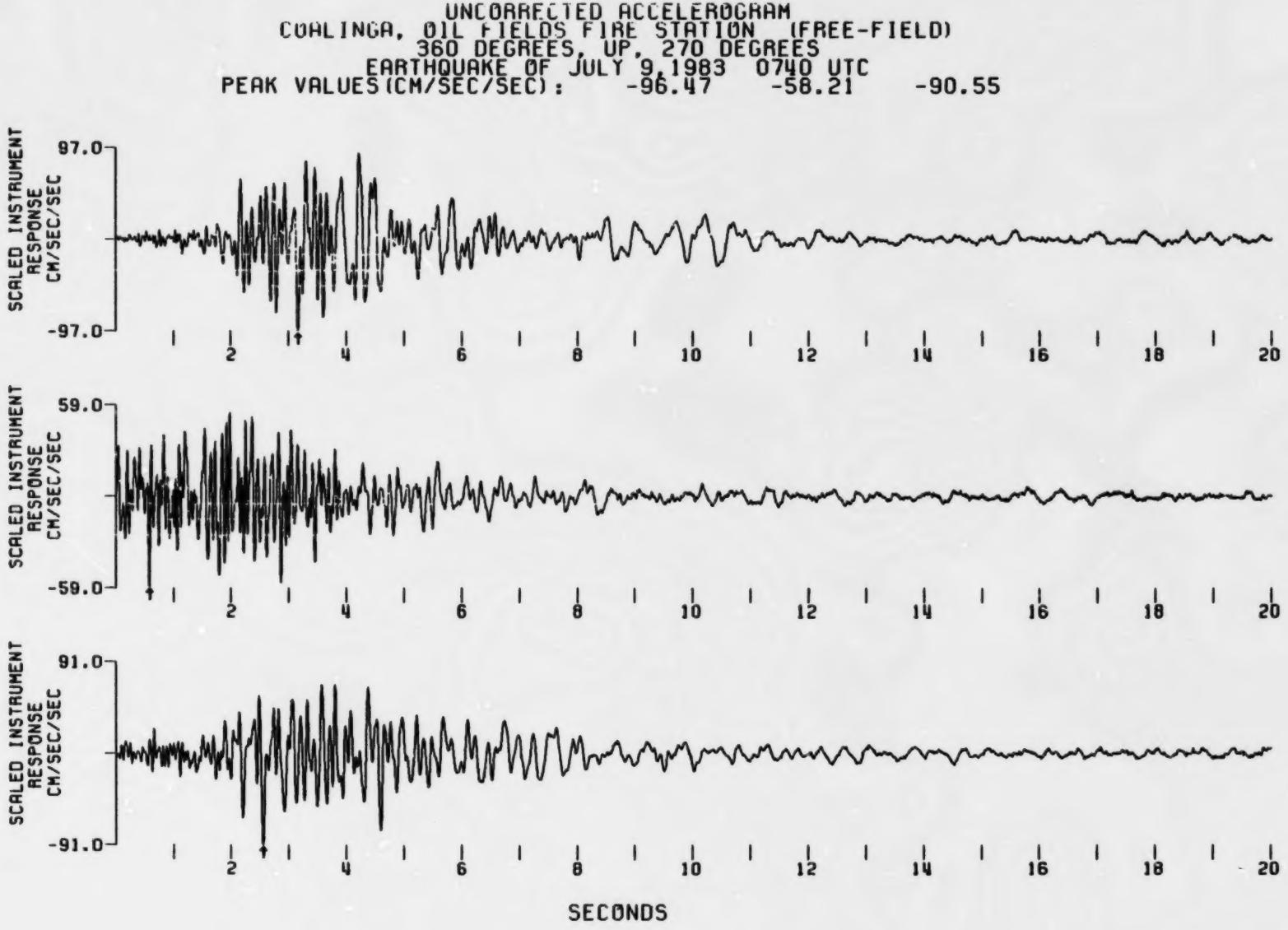
Refer to page ii for page numbers of specific plots.

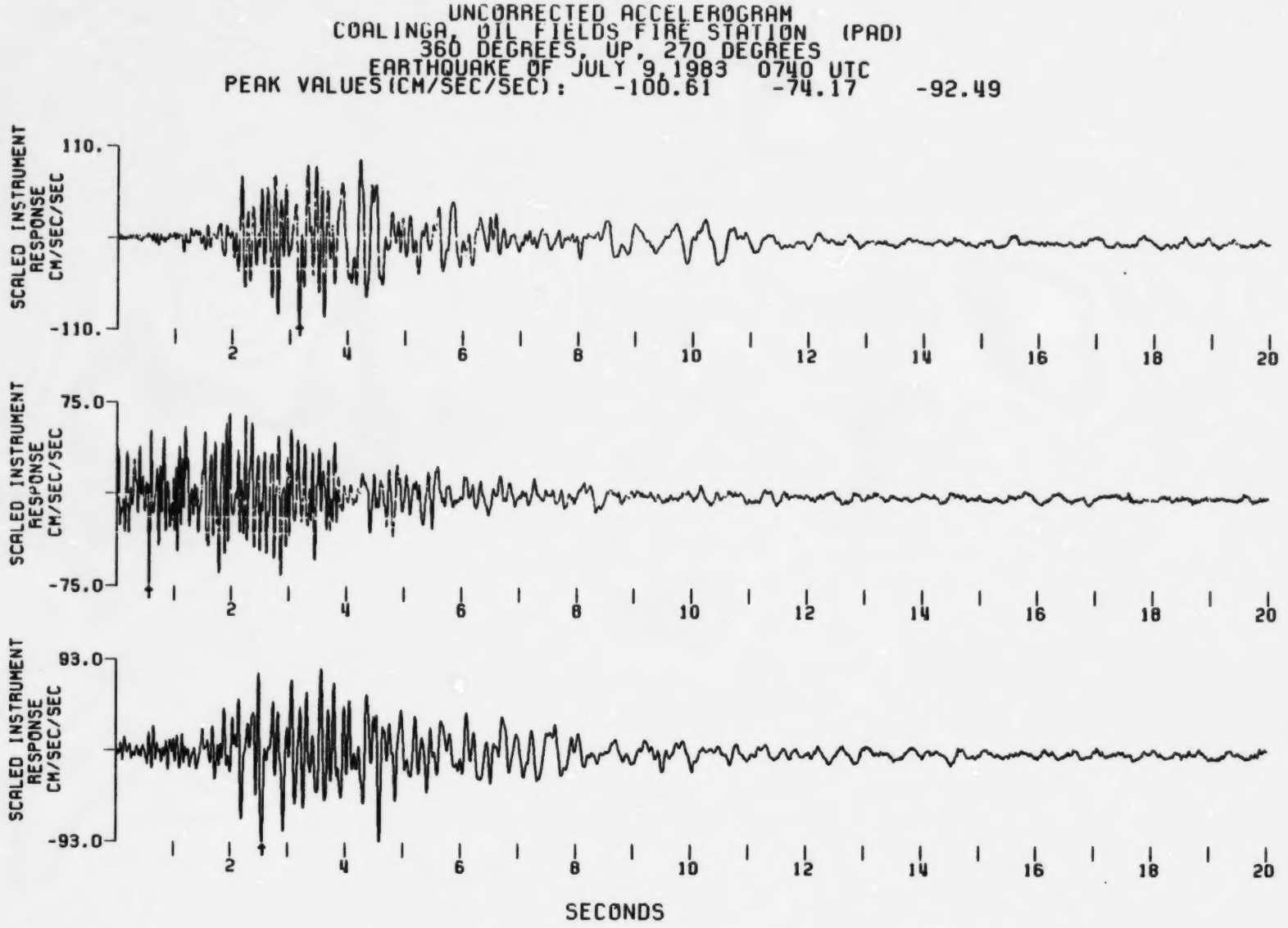

UNCORRECTED ACCELEROGRAM
COALINGA, ANTICLINE RIDGE (FREE FIELD)
360 DEGREES, UP, 270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
PEAK VALUES(CM/SEC/SEC): 266.19 112.43 -373.67
SCALED INSTRUMENT RESPONSE CM/SEC/SEC
270.
-270.
120.
-120.
380.
-380.
2
4
6
8
10
12
14
16
18
20
SECONDS

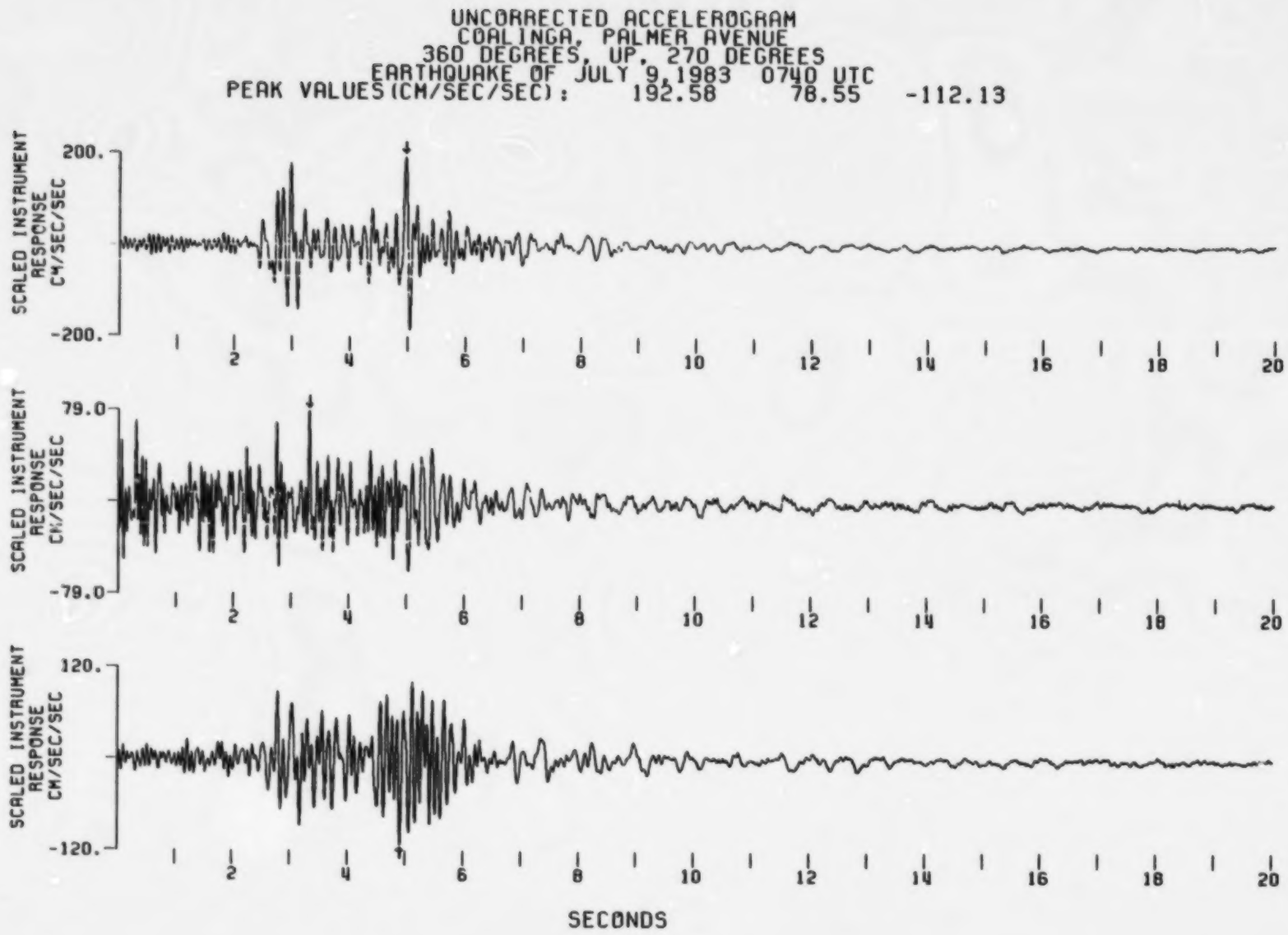

UNCORRECTED ACCELEROGRAM
COALINGA, ANTICLINE RIDGE (PAD SITE)
360 DEGREES, UP, 270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
PEAK VALUES(CM/SEC/SEC): 251.53 -123.20 -412.13
SCALED INSTRUMENT RESPONSE CM/SEC/SEC
260.
-260.
130.
-130.
420.
-420.
2
4
6
8
10
12
14
16
18
20
SECONDS

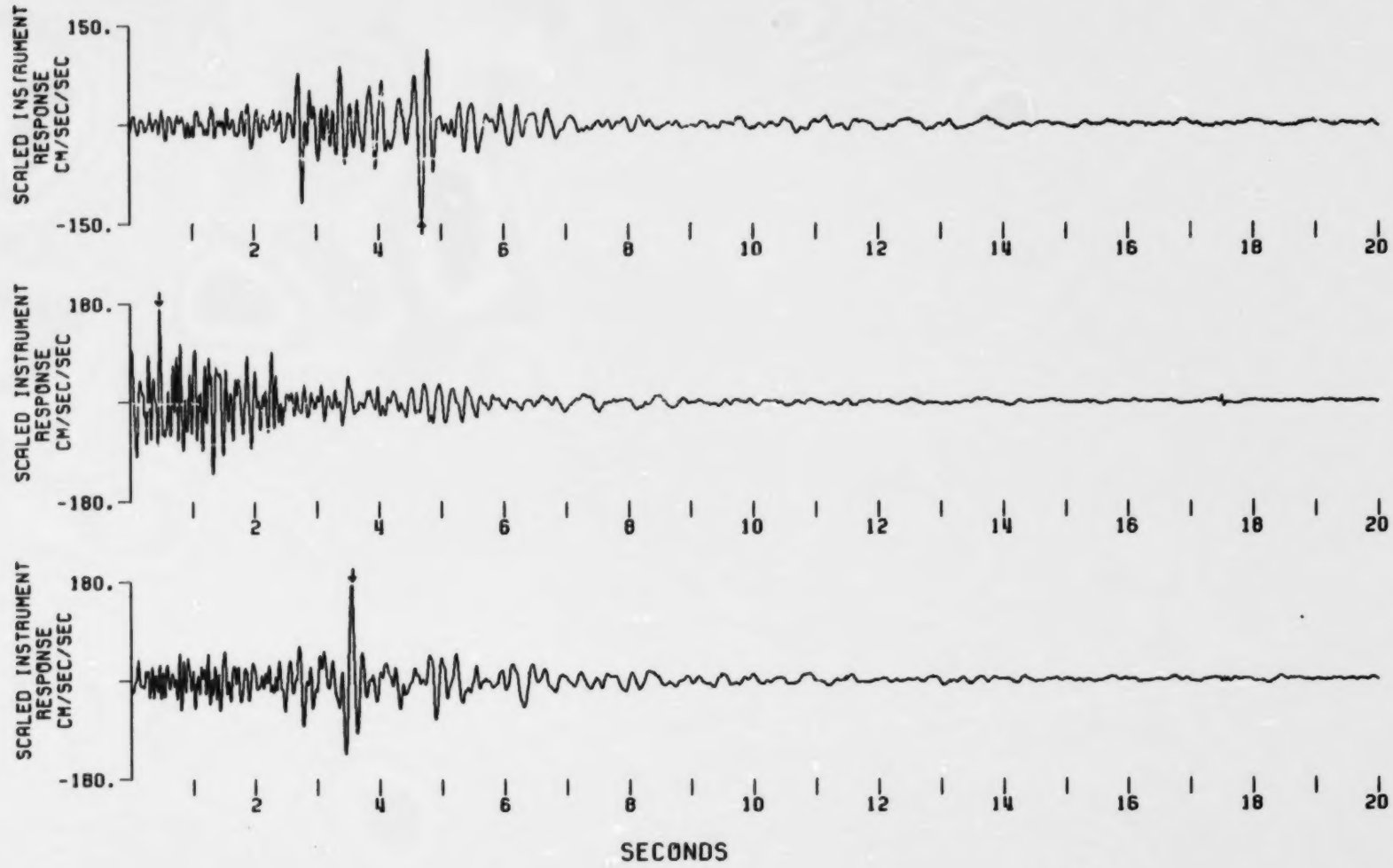

UNCORRECTED ACCELEROGRAM
COALINGA, BURNETT CONSTRUCTION
360 DEGREES, UP, 270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
PEAK VALUES(CM/SEC/SEC): 138.05 -77.11 103.64
SCALED INSTRUMENT RESPONSE CM/SEC/SEC
140.
-140.
78.0
-78.0
110.
-110.
2
4
6
8
10
12
14
16
18
20
SECONDS

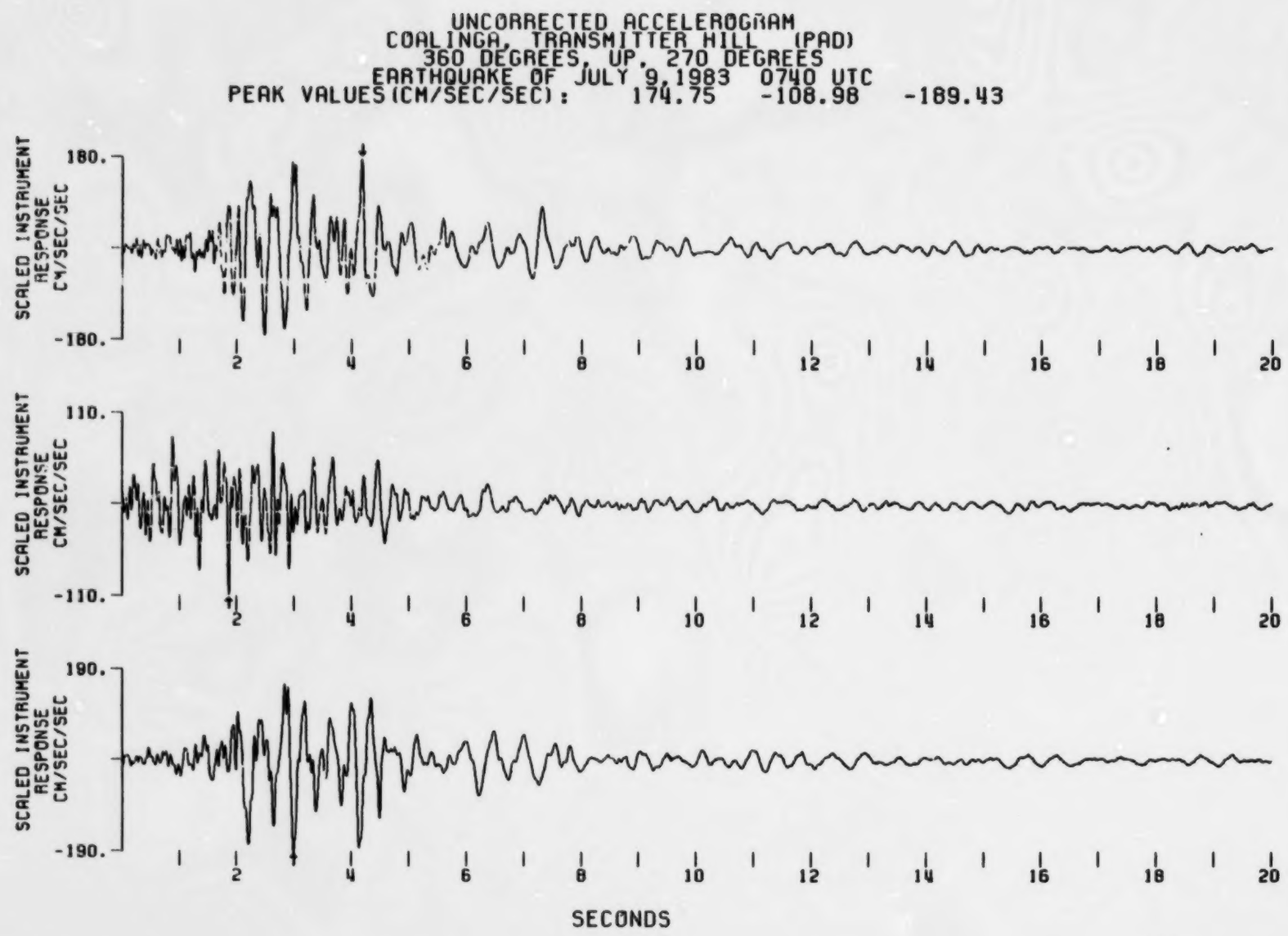

UNCORRECTED ACCELEROGRAM
COALINGA, OIL CITY
360 DEGREES, UP, 270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
PEAK VALUES(CM/SEC/SEC): -362.98 -206.87 -370.74
SCALED INSTRUMENT RESPONSE CM/SEC/SEC
370.
-370.
210.
-210.
380.
-380.
2
4
6
8
10
12
14
16
18
20
SECONDS


UNCORRECTED ACCELEROGRAM
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD)
360 DEGREES, UP, 270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
PEAK VALUES(CM/SEC/SEC): -96.47 -58.21 -90.55
SCALED INSTRUMENT RESPONSE CM/SEC/SEC
97.0
-97.0
59.0
-59.0
91.0
-91.0
2
4
6
8
10
12
14
16
18
20
SECONDS

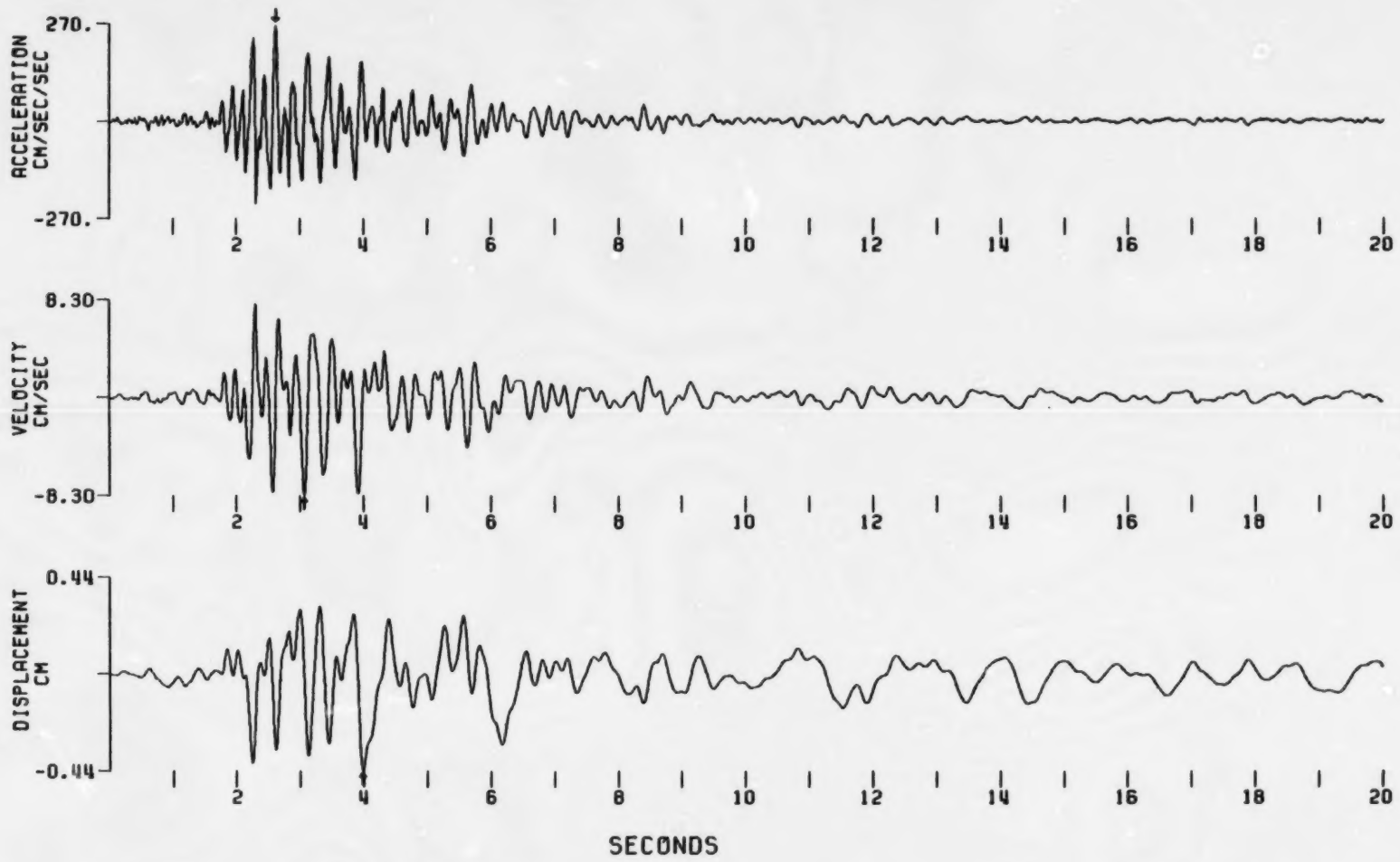

UNCORRECTED ACCELEROGRAM
COALINGA, OIL FIELDS FIRE STATION (PAD)
360 DEGREES, UP, 270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
PEAK VALUES(CM/SEC/SEC): -100.61 -74.17 -92.49
SCALED INSTRUMENT RESPONSE CM/SEC/SEC
110.
-110.
75.0
-75.0
93.0
-93.0
2
4
6
8
10
12
14
16
18
20
SECONDS

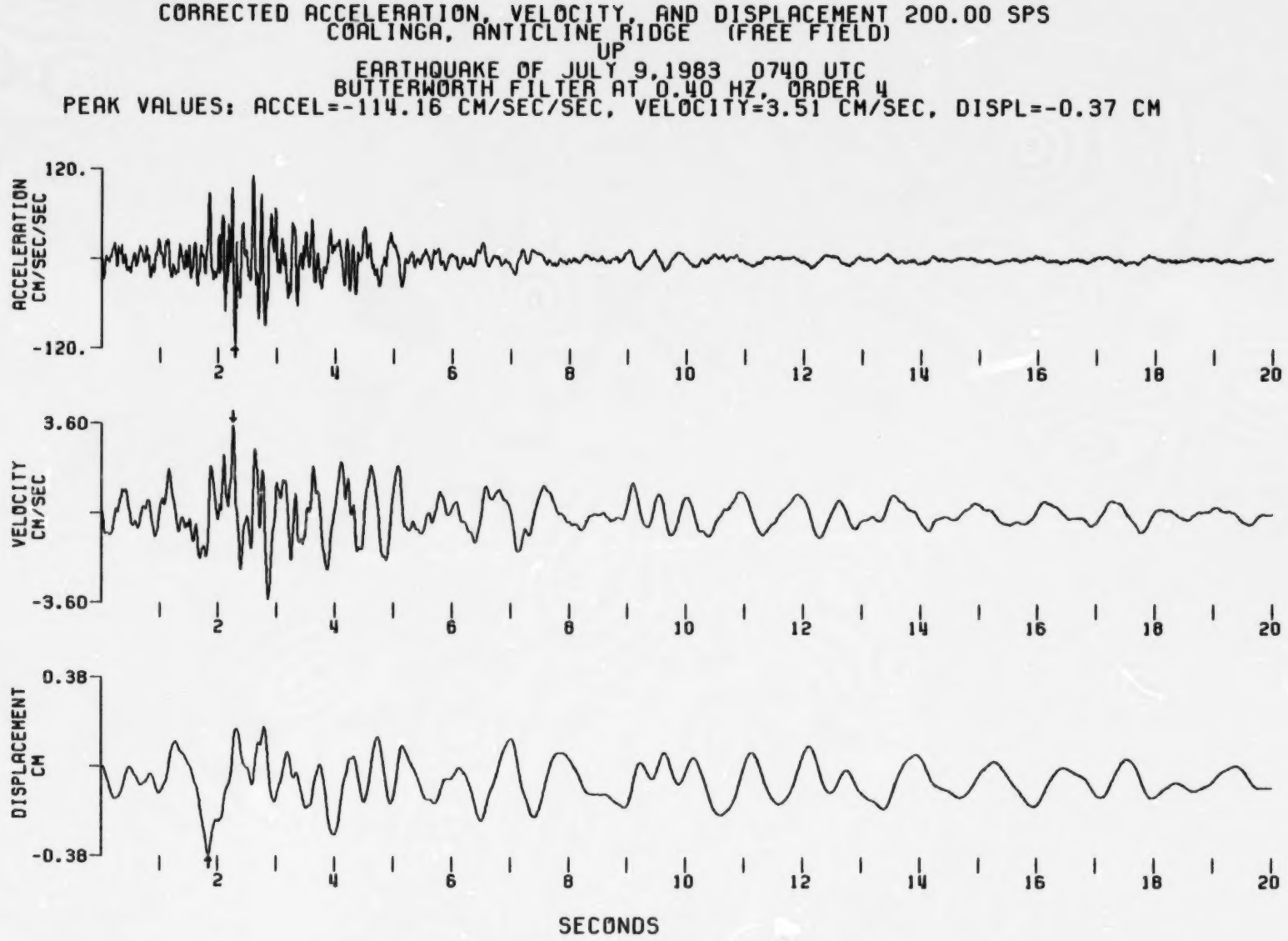

UNCORRECTED ACCELEROGRAM
COALINGA, PALMER AVENUE
360 DEGREES, UP, 270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
PEAK VALUES(CM/SEC/SEC): 192.58 78.55 -112.13
SCALED INSTRUMENT RESPONSE CM/SEC/SEC
200.
-200.
79.0
-79.0
120.
-120.
2
4
6
8
10
12
14
16
18
20
SECONDS

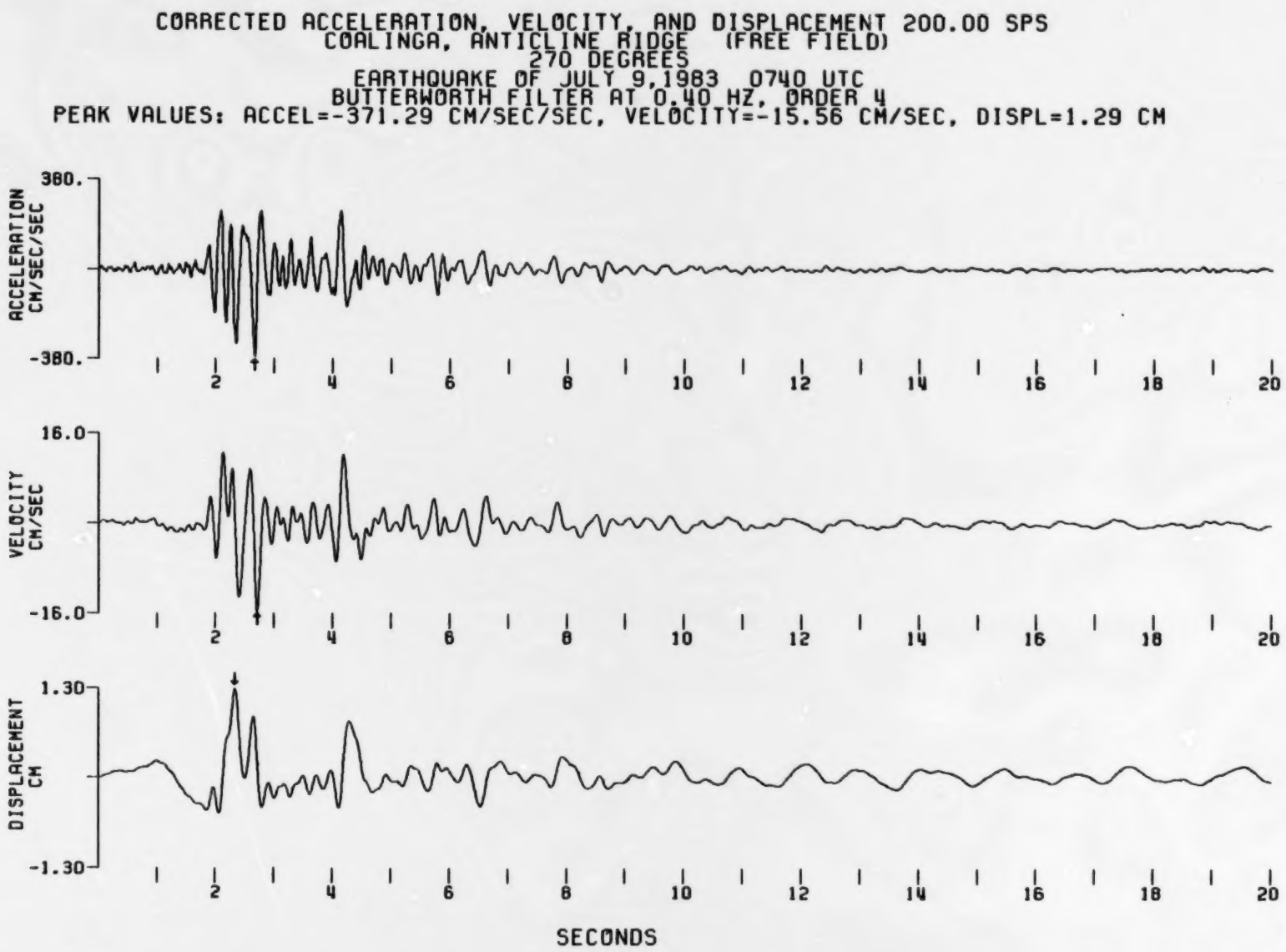

UNCORRECTED ACCELEROGRAM
COALINGA, SKUNK HOLLOW
360 DEGREES, UP, 270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
PEAK VALUES(CM/SEC/SEC): -143.25 170.89 173.34
SCALED INSTRUMENT RESPONSE CM/SEC/SEC
150.
-150.
180.
-180.
2
4
6
8
10
12
14
16
18
20
SECONDS

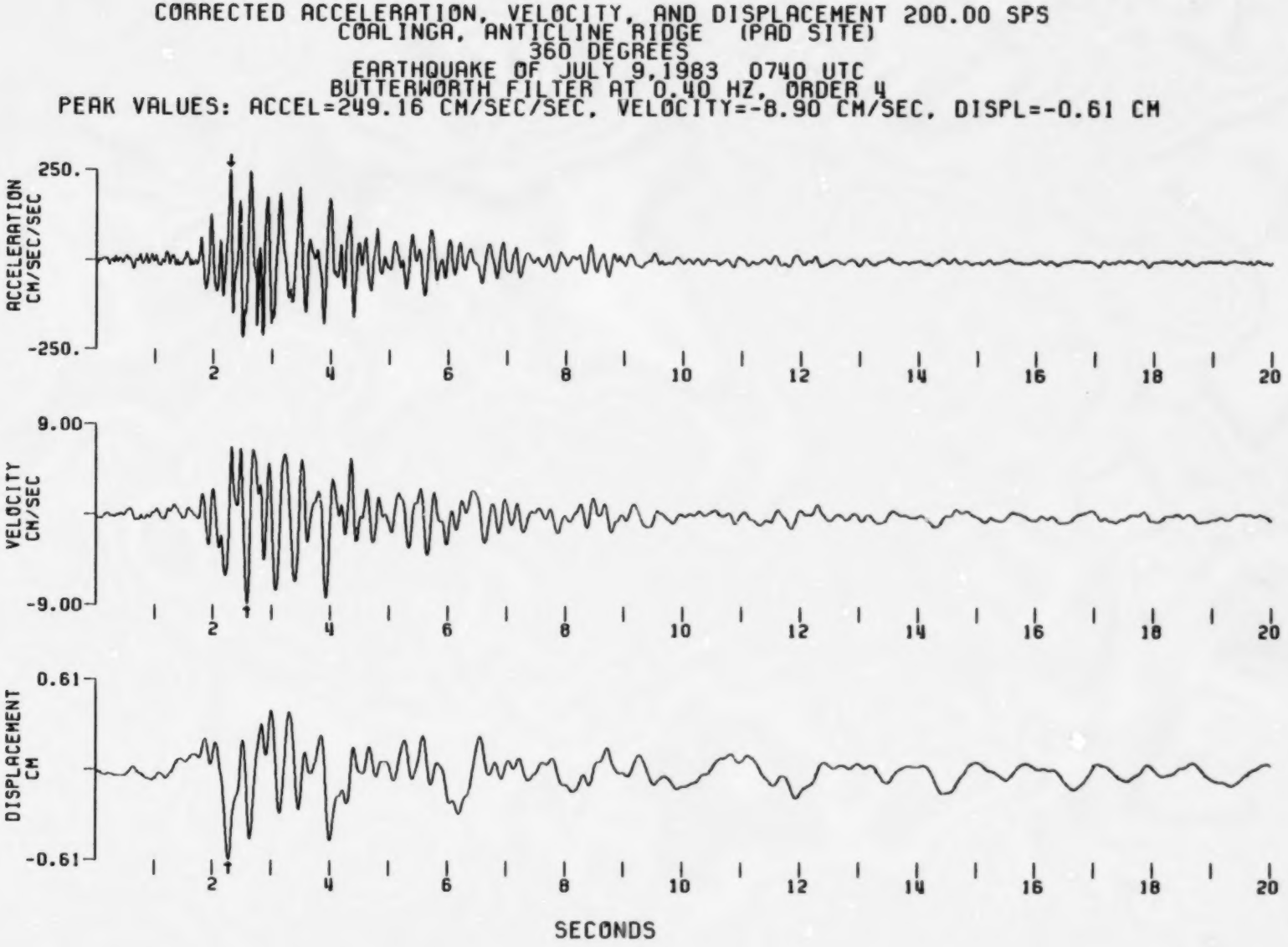

UNCORRECTED ACCELEROGRAM
COALINGA, TRANSMITTER HILL (PAD)
360 DEGREES, UP, 270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
PEAK VALUES(CM/SEC/SEC): 174.75 -108.98 -189.43
SCALED INSTRUMENT RESPONSE CM/SEC/SEC
180.
-180.
110.
-110.
190.
-190.
2
4
6
8
10
12
14
16
18
20
SECONDS

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, ANTICLINE RIDGE (FREE FIELD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
PEAK VALUES: ACCEL=264.13 CM/SEC/SEC, VELOCITY=-8.23 CM/SEC, DISPL=-0.44 CM

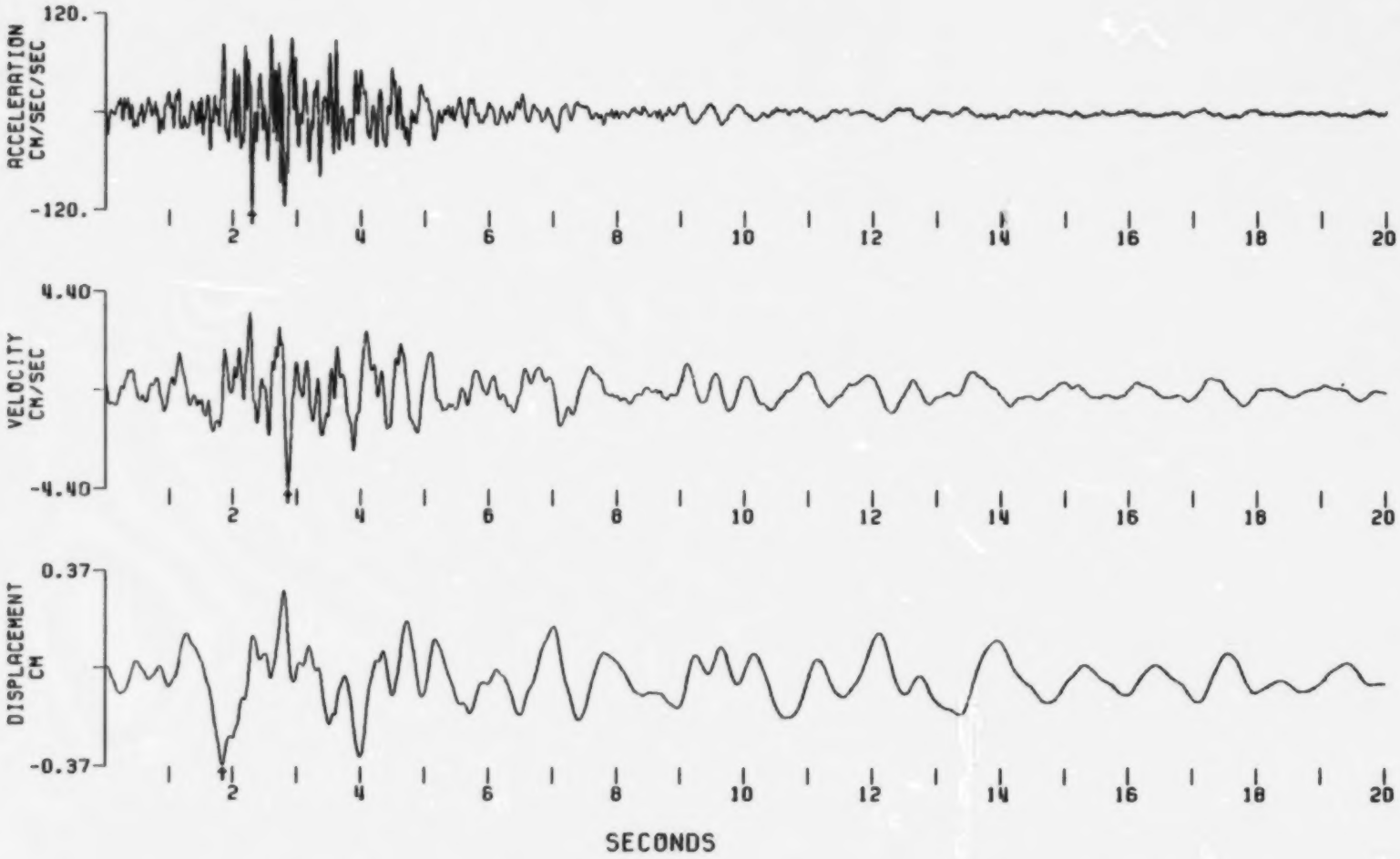



CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, ANTICLINE RIDGE (FREE FIELD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
PEAK VALUES: ACCEL=-114.16 CM/SEC/SEC, VELOCITY=3.51 CM/SEC, DISPL=-0.37 CM
ACCELERATION CM/SEC/SEC
120.
-120.
VELOCITY CM/SEC
3.60
-3.60
DISPLACEMENT CM
0.38
-0.38
2
4
6
8
10
12
14
16
18
20
SECONDS

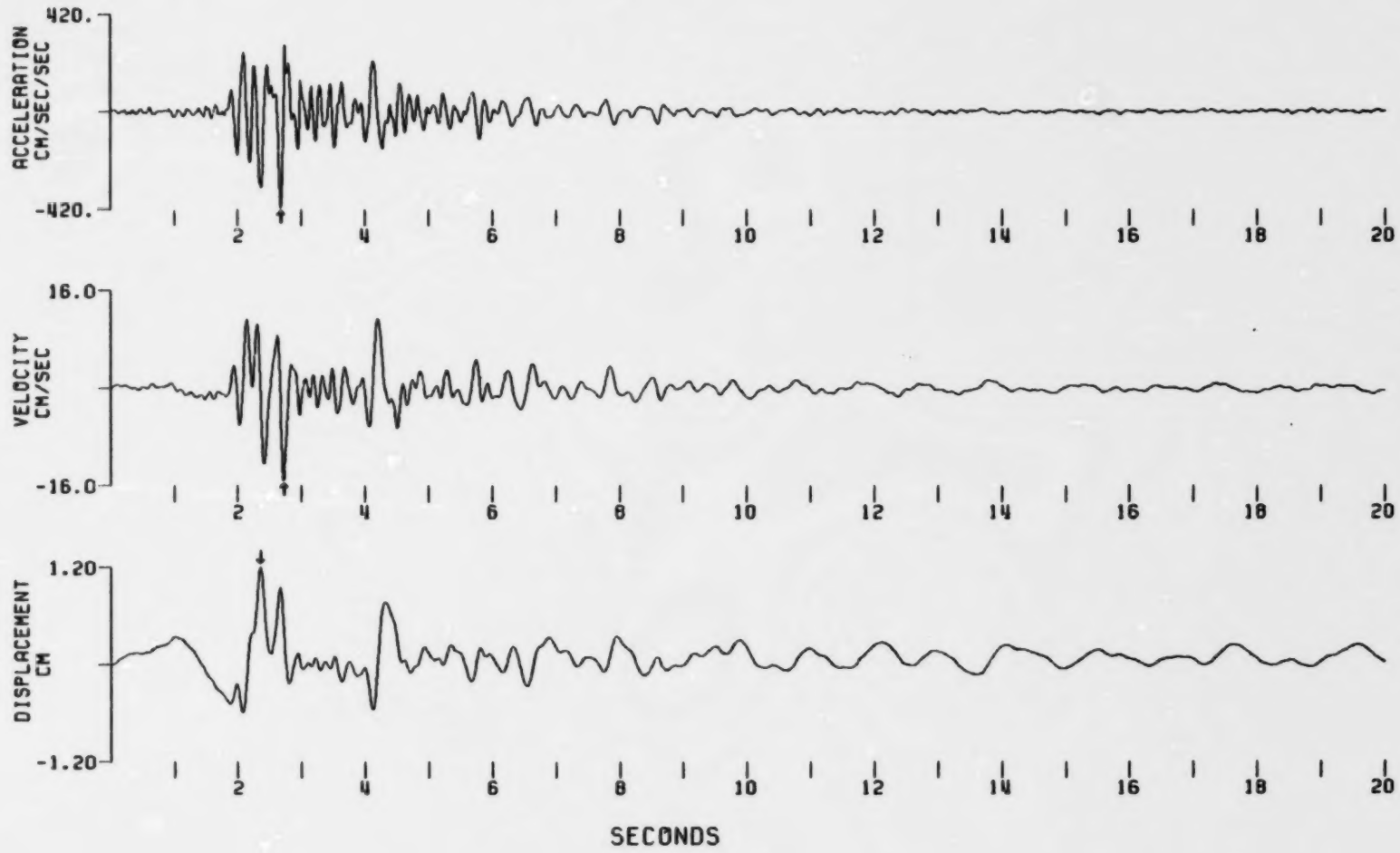

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, ANTICLINE RIDGE (FREE FIELD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
PEAK VALUES: ACCEL=-371.29 CM/SEC/SEC, VELOCITY=-15.56 CM/SEC, DISPL=1.29 CM
ACCELERATION CM/SEC/SEC
380.
-380.
VELOCITY CM/SEC
16.0
-16.0
DISPLACEMENT CM
1.30
-1.30
2
4
6
8
10
12
14
16
18
20
SECONDS

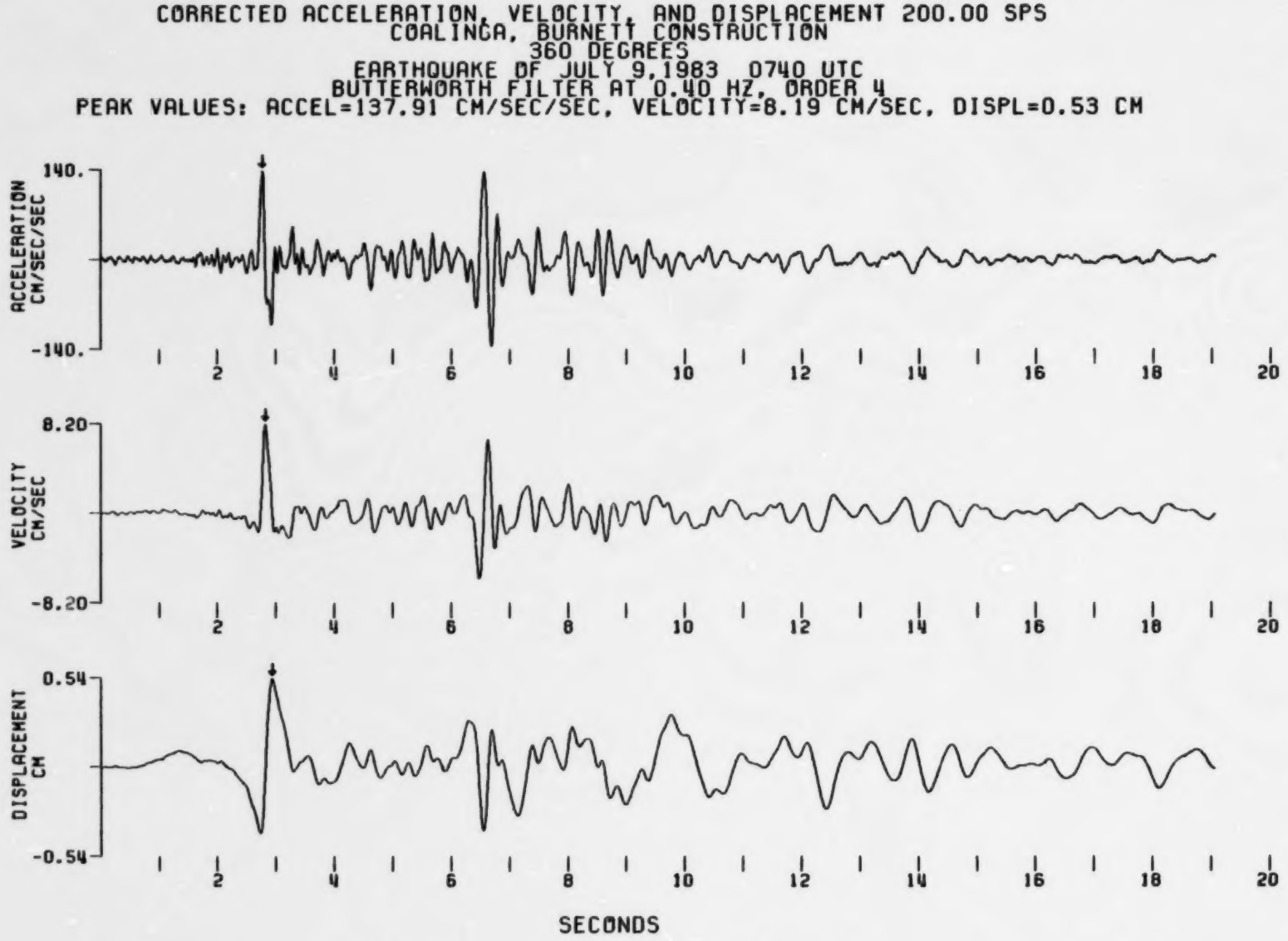

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, ANTICLINE RIDGE (PAD SITE)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
PEAK VALUES: ACCEL=249.16 CM/SEC/SEC, VELOCITY=-8.90 CM/SEC, DISPL=-0.61 CM
ACCELERATION CM/SEC/SEC
250.
-250.
VELOCITY CM/SEC
9.00
-9.00
DISPLACEMENT CM
0.61
-0.61
2
4
6
8
10
12
14
16
18
20
SECONDS

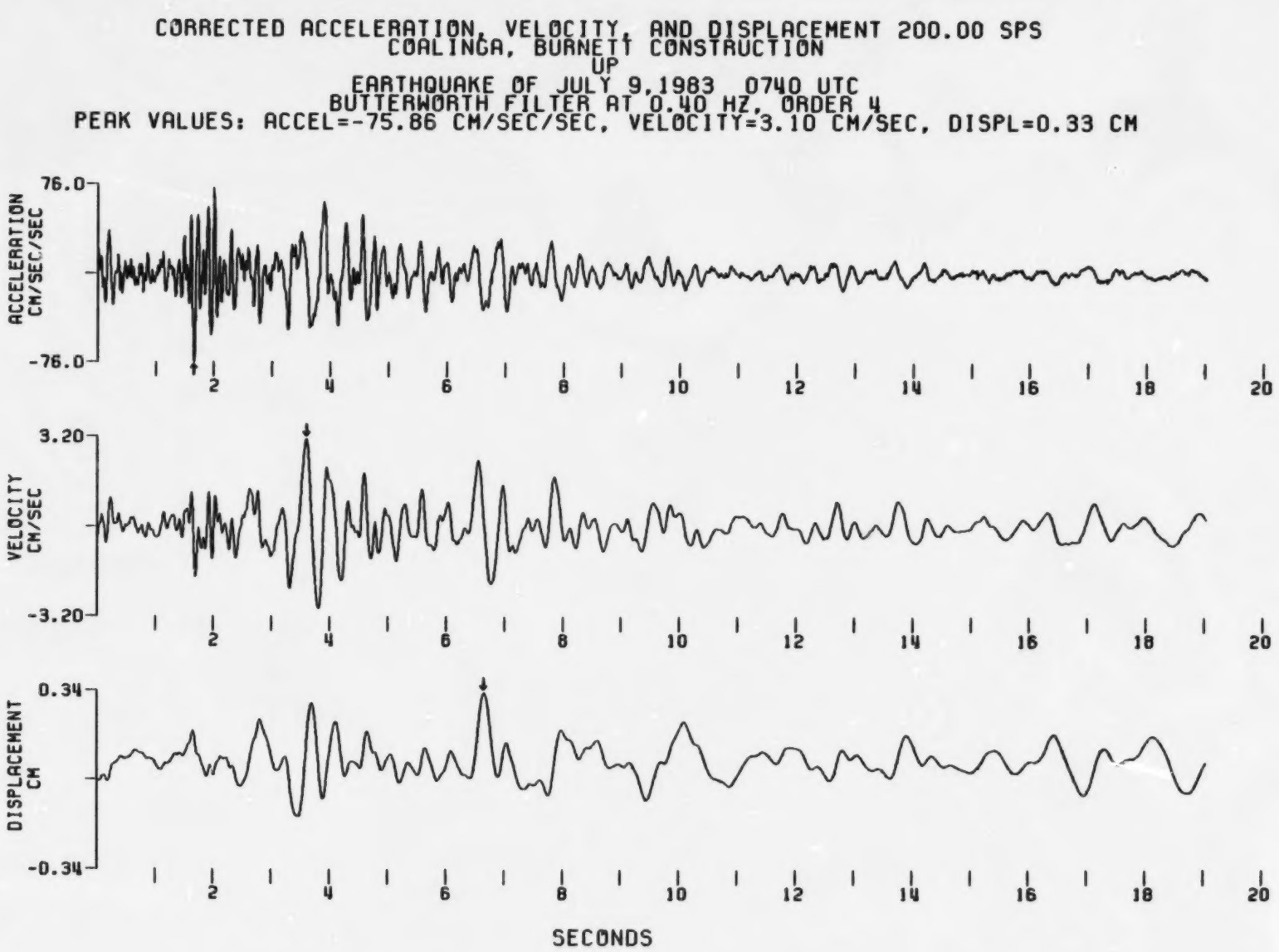
CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, ANTICLINE RIDGE (PAD SITE)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
PEAK VALUES: ACCEL=-118.07 CM/SEC/SEC, VELOCITY=-4.36 CM/SEC, DISPL=-0.37 CM

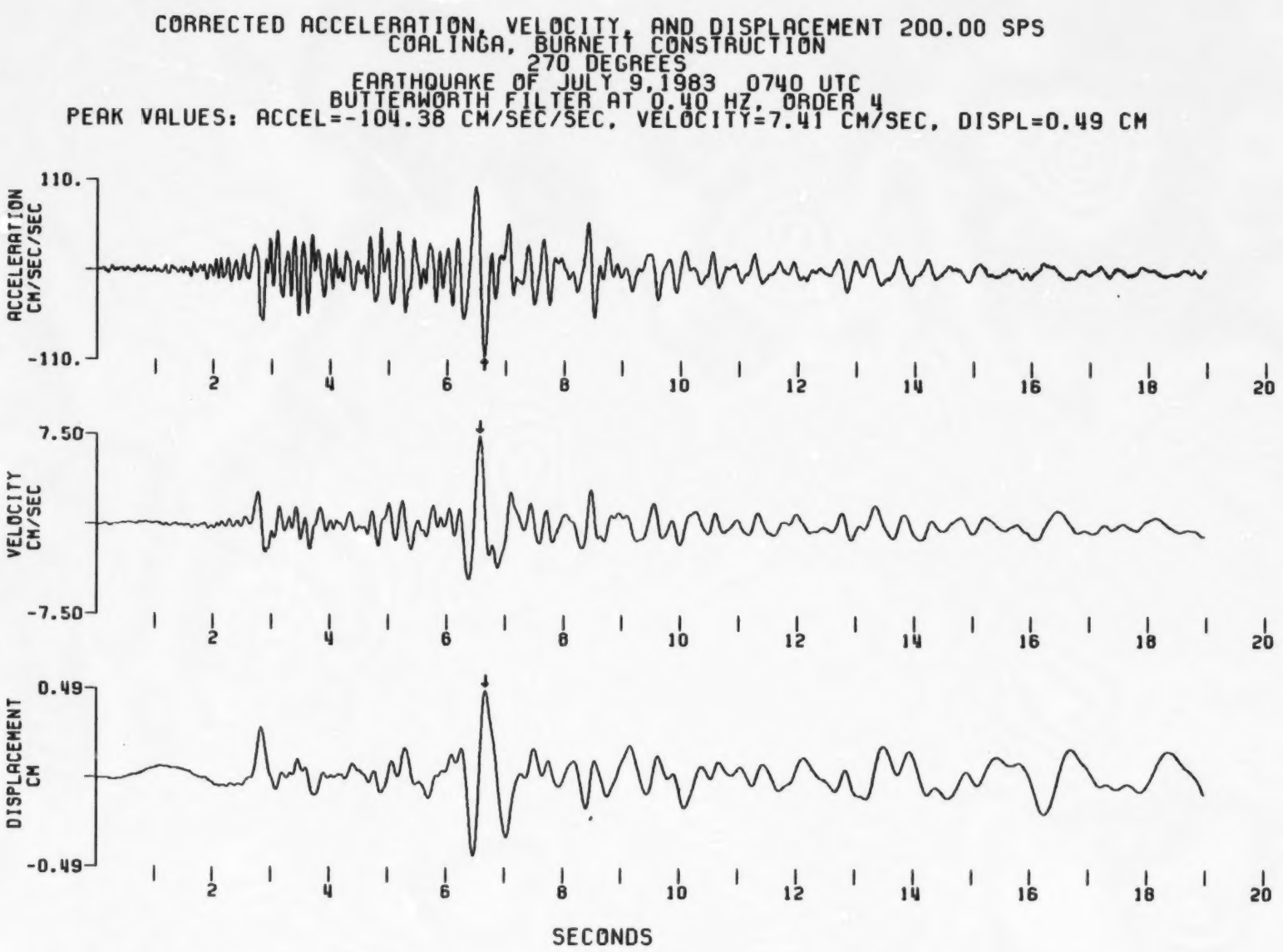


CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, ANTICLINE RIDGE (PAD SITE)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
PEAK VALUES: ACCEL=-410.73 CM/SEC/SEC, VELOCITY=-15.11 CM/SEC, DISPL=1.20 CM

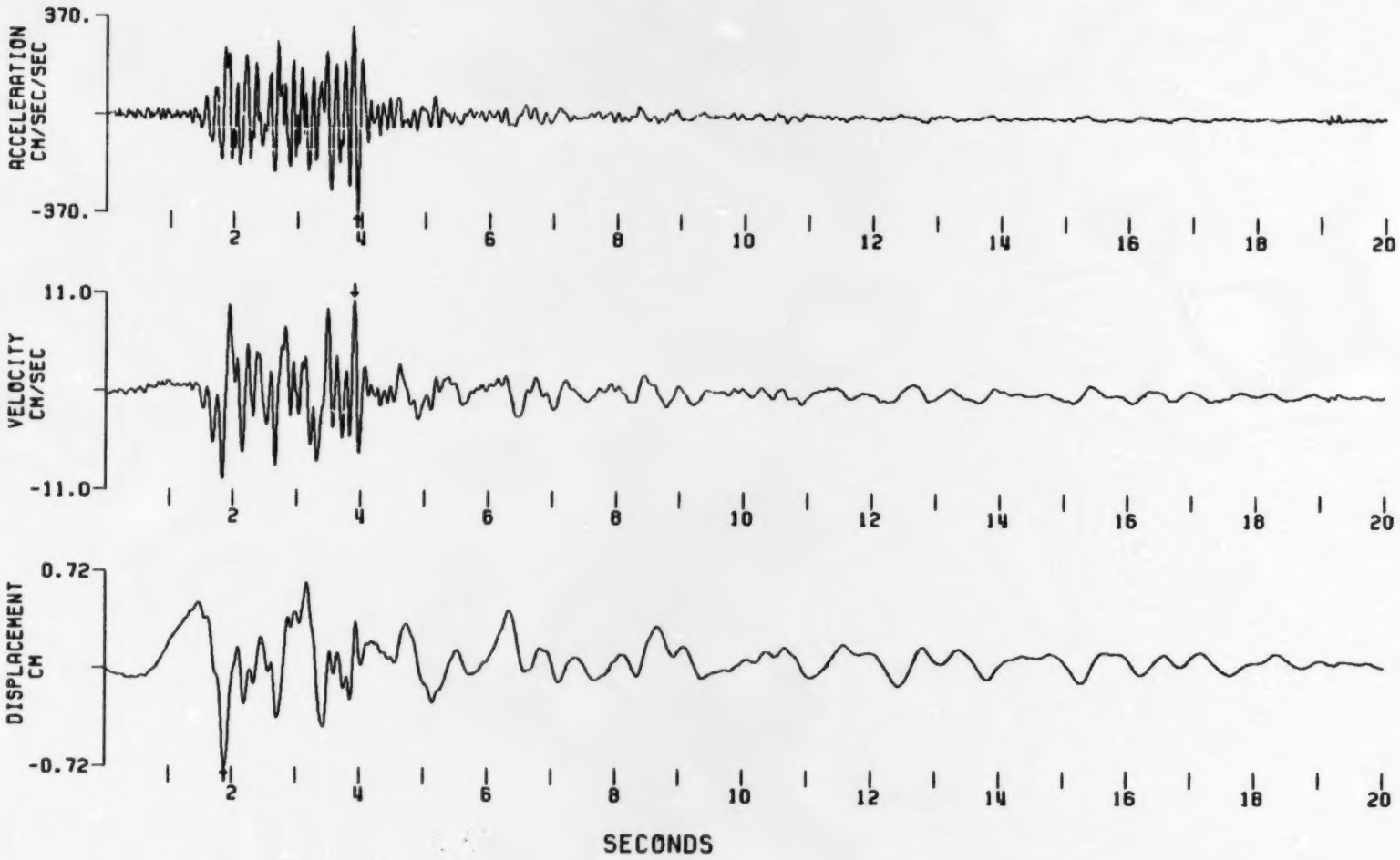



CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, BURNETT CONSTRUCTION
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
PEAK VALUES: ACCEL=137.91 CM/SEC/SEC, VELOCITY=8.19 CM/SEC, DISPL=0.53 CM
ACCELERATION CM/SEC/SEC
140.
-140.
VELOCITY CM/SEC
8.20
-8.20
DISPLACEMENT CM
0.54
-0.54
2
4
6
8
10
12
14
16
18
20
SECONDS

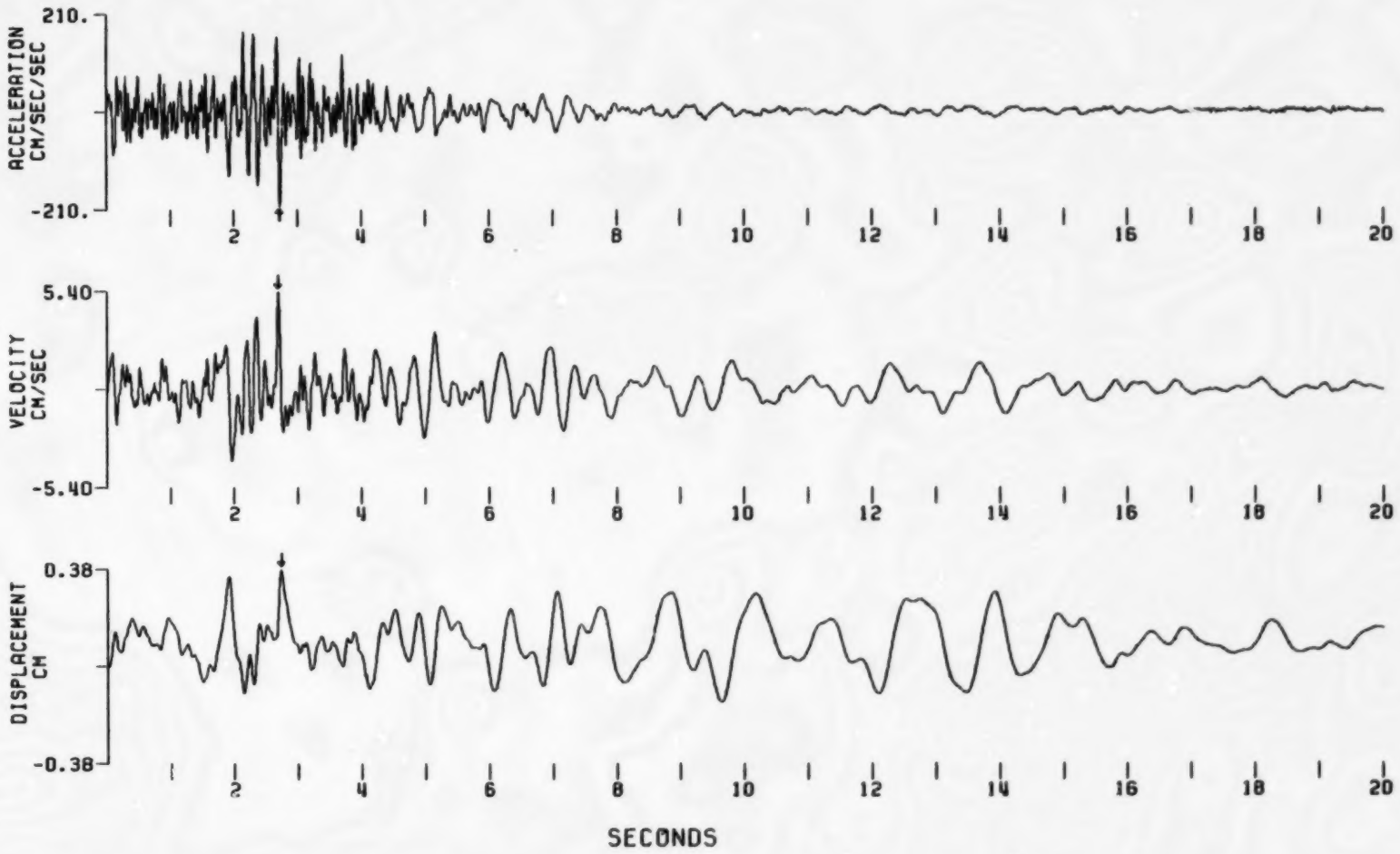

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, BURNETT CONSTRUCTION
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
PEAK VALUES: ACCEL=-75.86 CM/SEC/SEC, VELOCITY=3.10 CM/SEC, DISPL=0.33 CM
ACCELERATION CM/SEC/SEC
76.0
-76.0
VELOCITY CM/SEC
3.20
-3.20
DISPLACEMENT CM
0.34
-0.34
2
4
6
8
10
12
14
16
18
20
SECONDS

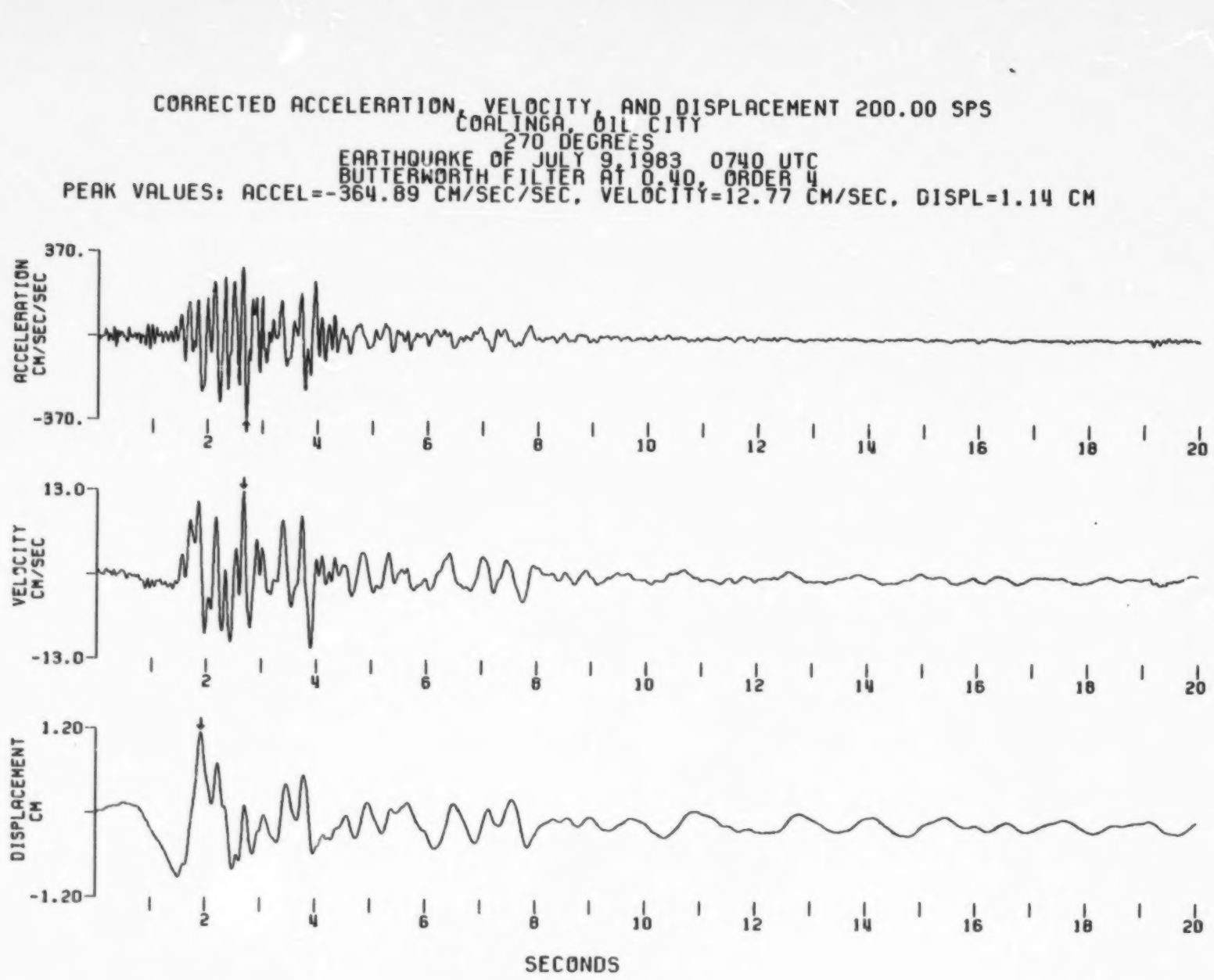

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, BURNETT CONSTRUCTION
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
PEAK VALUES: ACCEL=-104.38 CM/SEC/SEC, VELOCITY=7.41 CM/SEC, DISPL=0.49 CM
ACCELERATION CM/SEC/SEC
110.
-110.
VELOCITY CM/SEC
7.50
-7.50
DISPLACEMENT CM
0.49
-0.49
2
4
6
8
10
12
14
16
18
20
SECONDS

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, OIL CITY
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-368.95 CM/SEC/SEC, VELOCITY=10.26 CM/SEC, DISPL=-0.72 CM

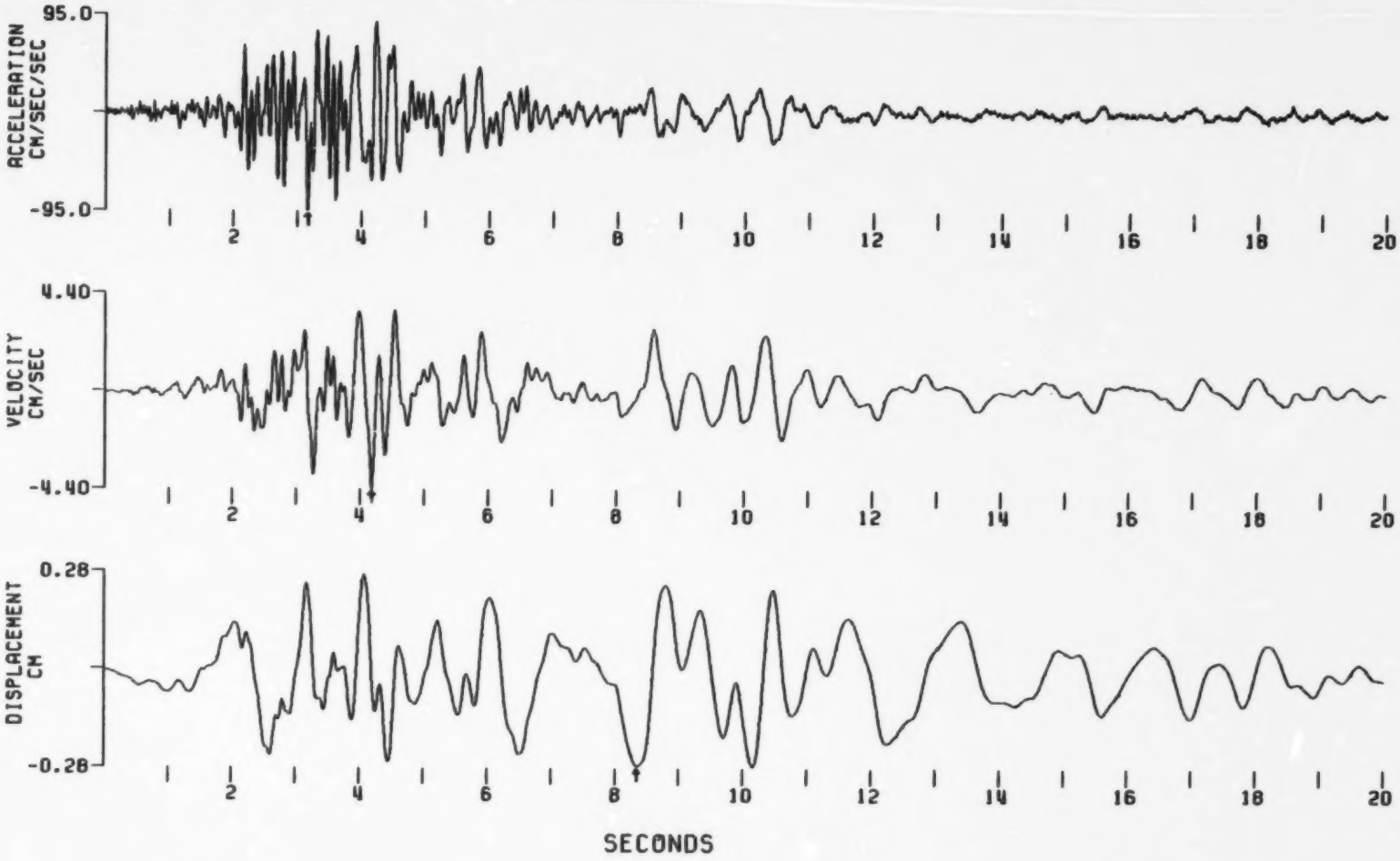


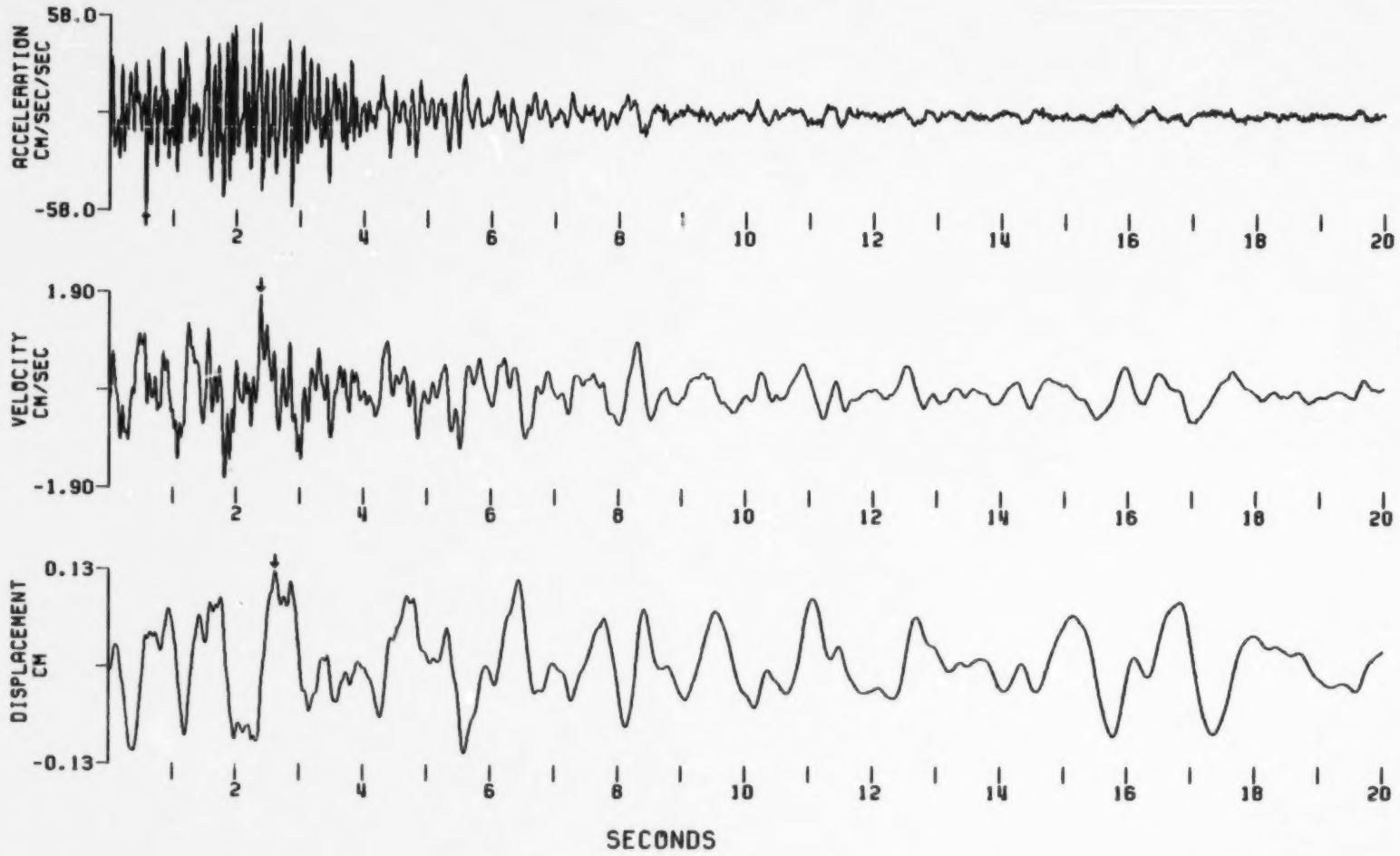
CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, OIL CITY
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-201.43 CM/SEC/SEC, VELOCITY=5.37 CM/SEC, DISPL=0.38 CM



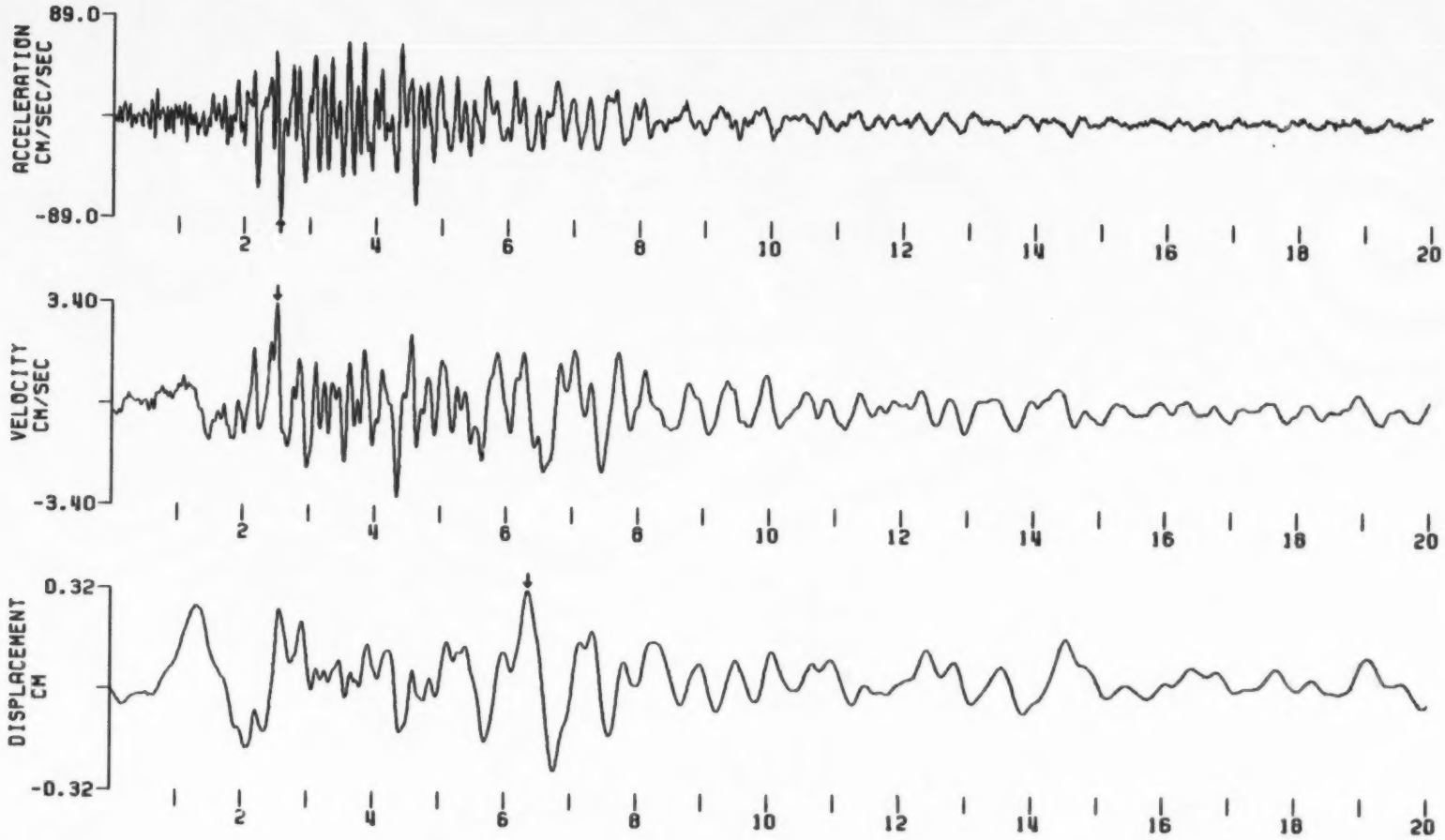

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, OIL CITY
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-364.89 CM/SEC/SEC, VELOCITY=12.77 CM/SEC, DISPL=1.14 CM
ACCELERATION CM/SEC/SEC
370.
-370.
VELOCITY CM/SEC
13.0
-13.0
DISPLACEMENT CM
1.20
-1.20
2
4
6
8
10
12
14
16
18
20
SECONDS

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-94.30 CM/SEC/SEC, VELOCITY=-4.36 CM/SEC, DISPL=-0.27 CM

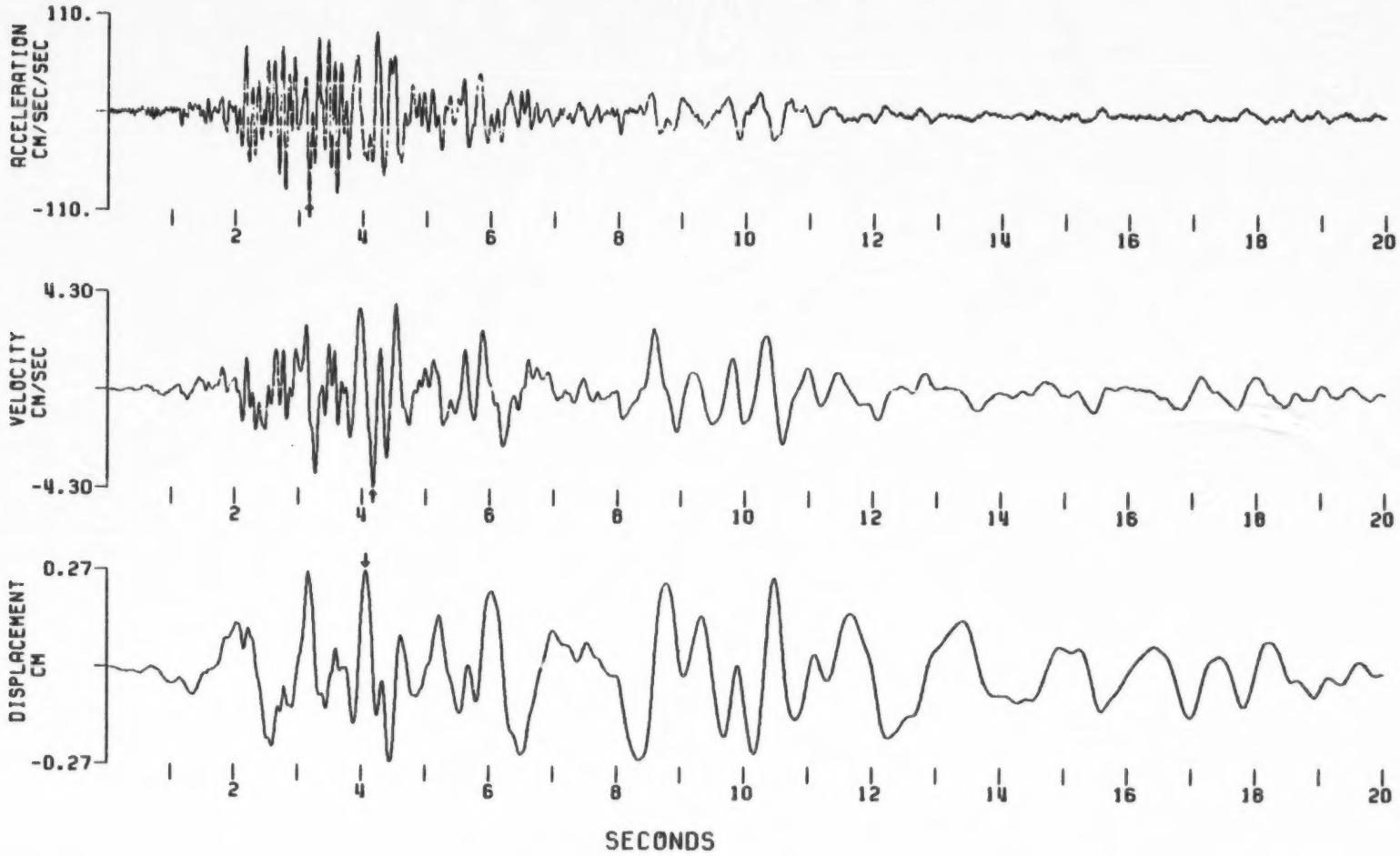



CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-57.95 CM/SEC/SEC, VELOCITY=1.85 CM/SEC, DISPL=0.13 CM
ACCELERATION CM/SEC/SEC
58.0
-58.0
VELOCITY CM/SEC
1.90
-1.90
DISPLACEMENT CM
0.13
-0.13
2
4
6
8
10
12
14
16
18
20
SECONDS

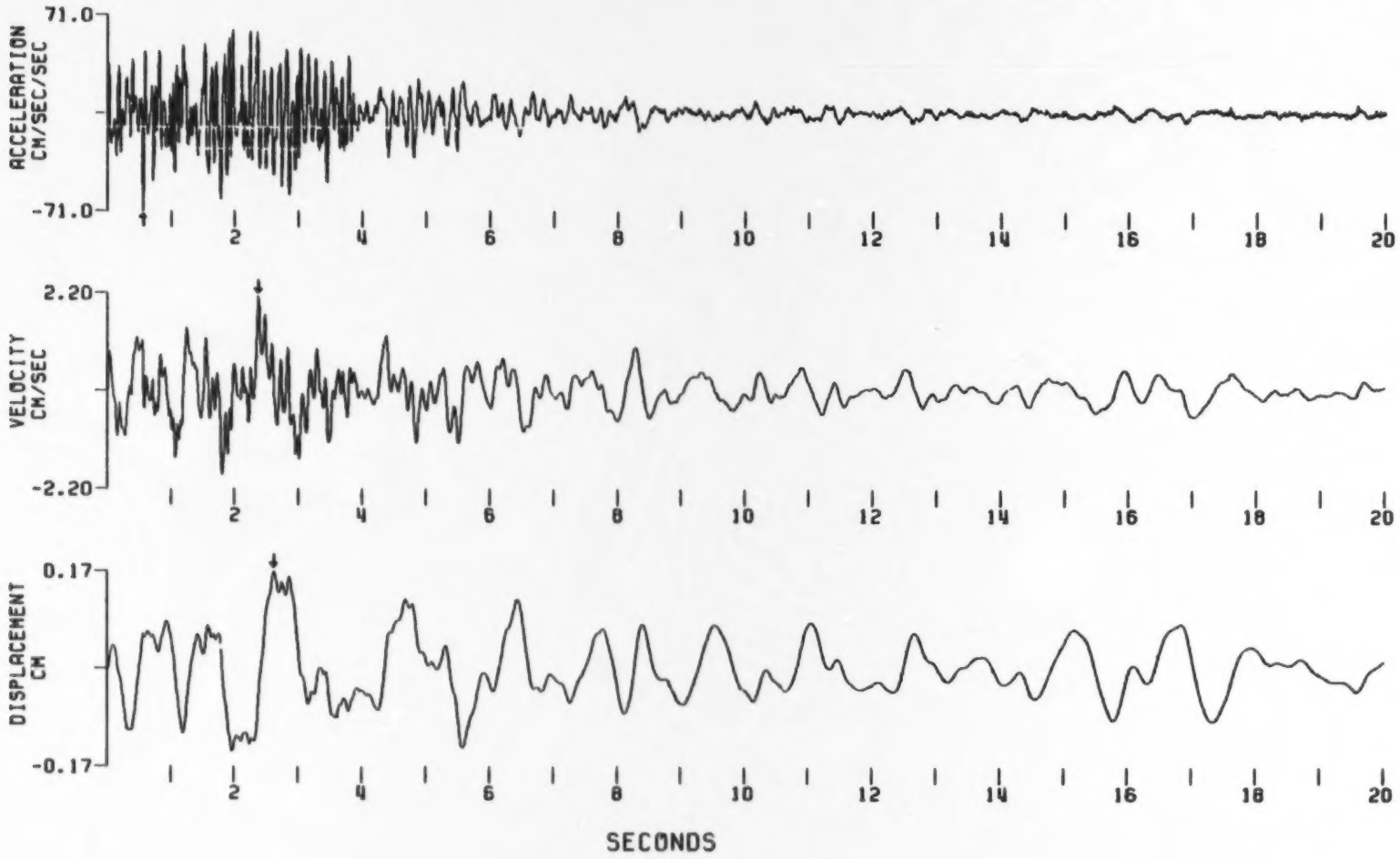
CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-88.54 CM/SEC/SEC, VELOCITY=3.36 CM/SEC, DISPL=0.32 CM

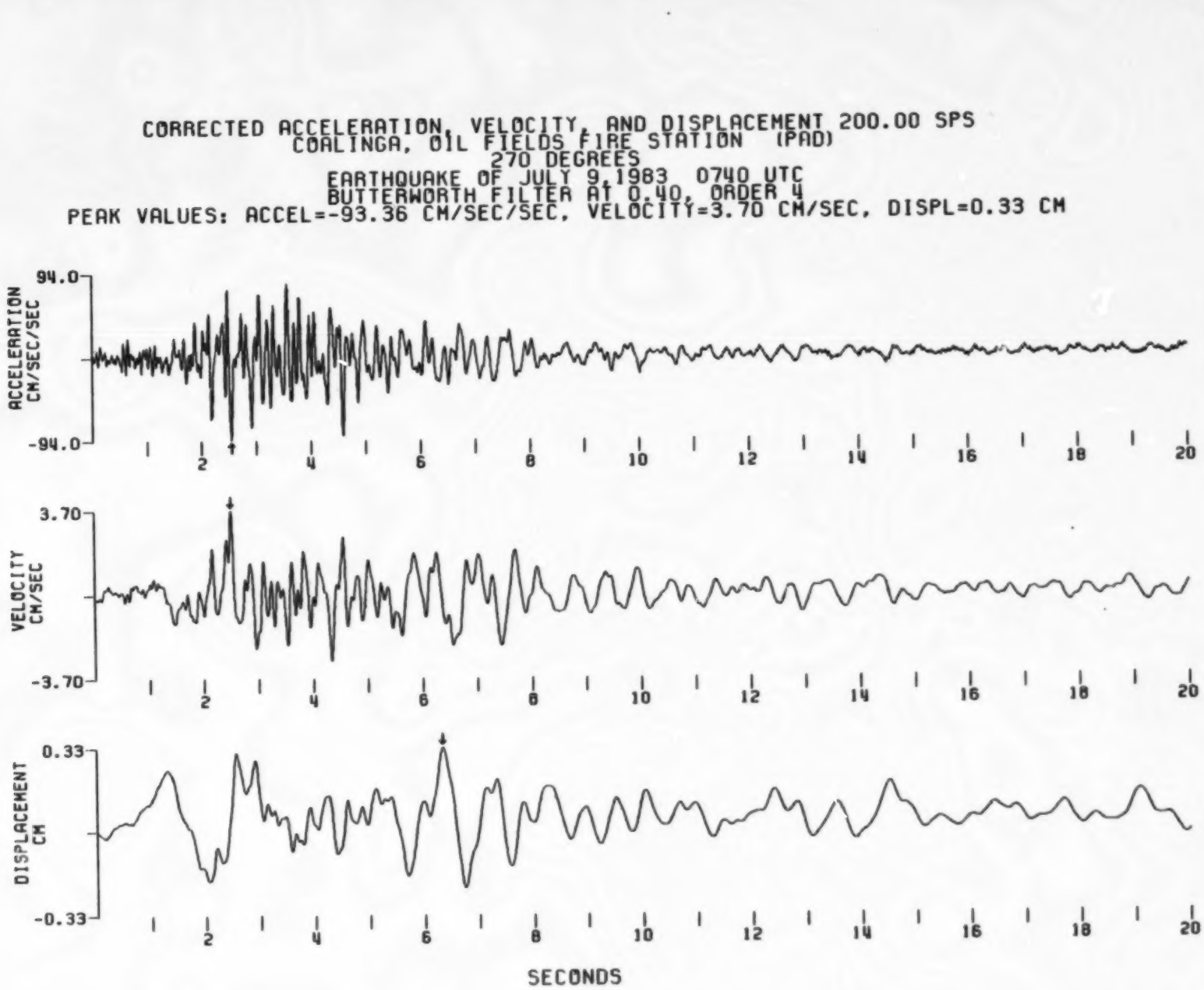


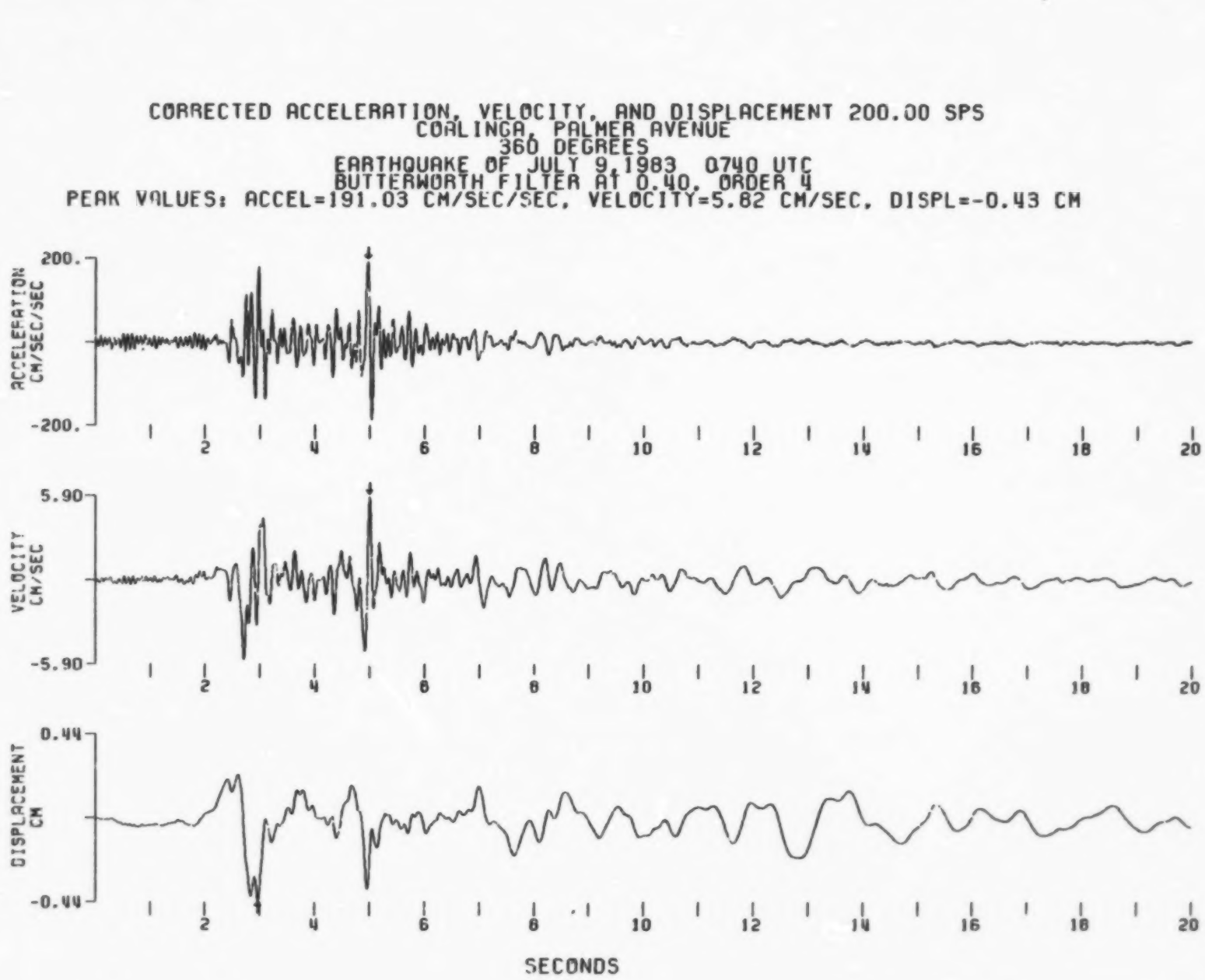
CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, OIL FIELDS FIRE STATION (PAD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-100.08 CM/SEC/SEC, VELOCITY=-4.26 CM/SEC, DISPL=0.27 CM

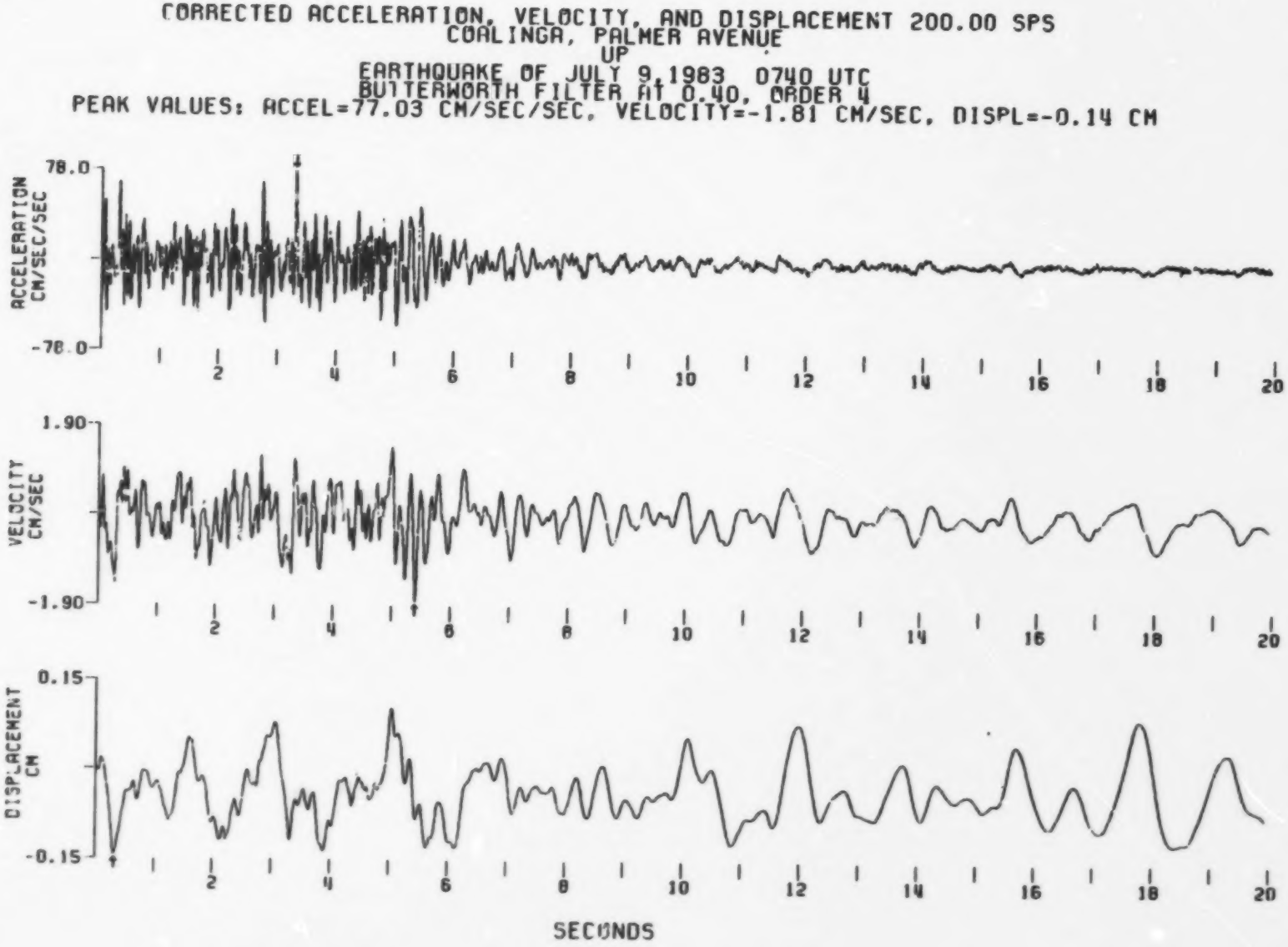


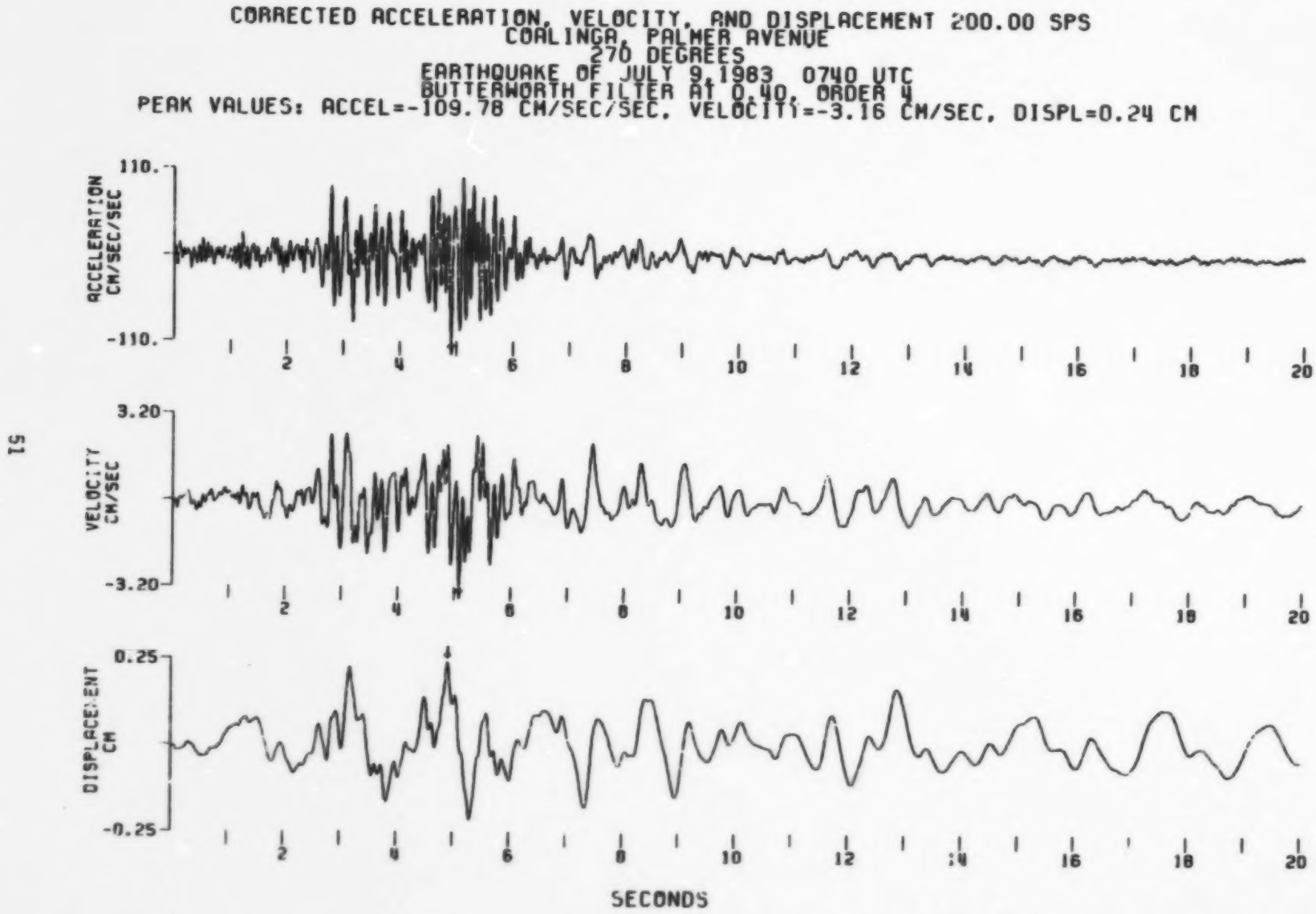
CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, OIL FIELDS FIRE STATION (PAD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-70.98 CM/SEC/SEC, VELOCITY=2.11 CM/SEC, DISPL=0.17 CM



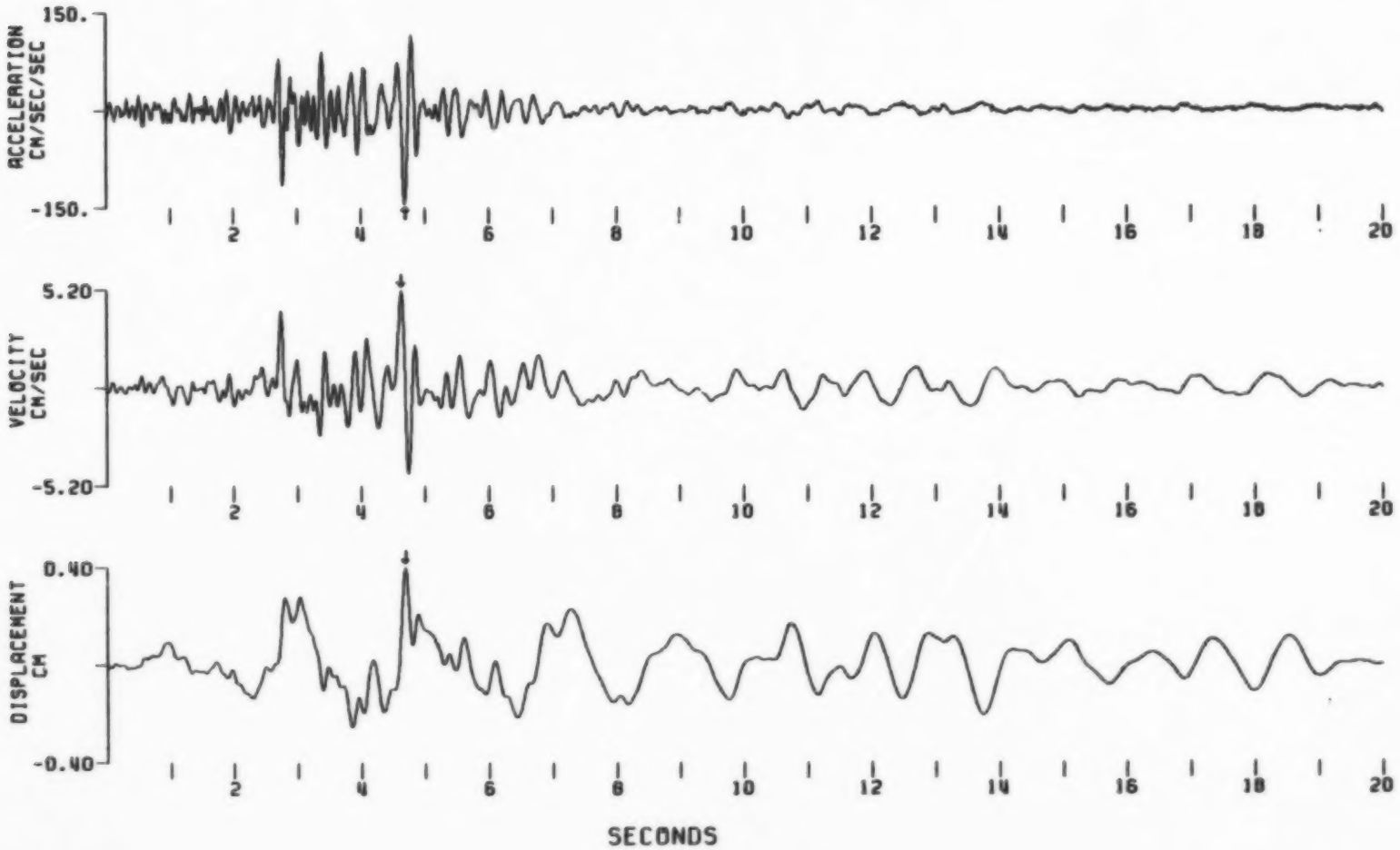

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, OIL FIELDS FIRE STATION (PAD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-93.36 CM/SEC/SEC, VELOCITY=3.70 CM/SEC, DISPL=0.33 CM
ACCELERATION CM/SEC/SEC
94.0
-94.0
VELOCITY CM/SEC
3.70
-3.70
DISPLACEMENT CM
0.33
-0.33
2
4
6
8
10
12
14
16
18
20
SECONDS

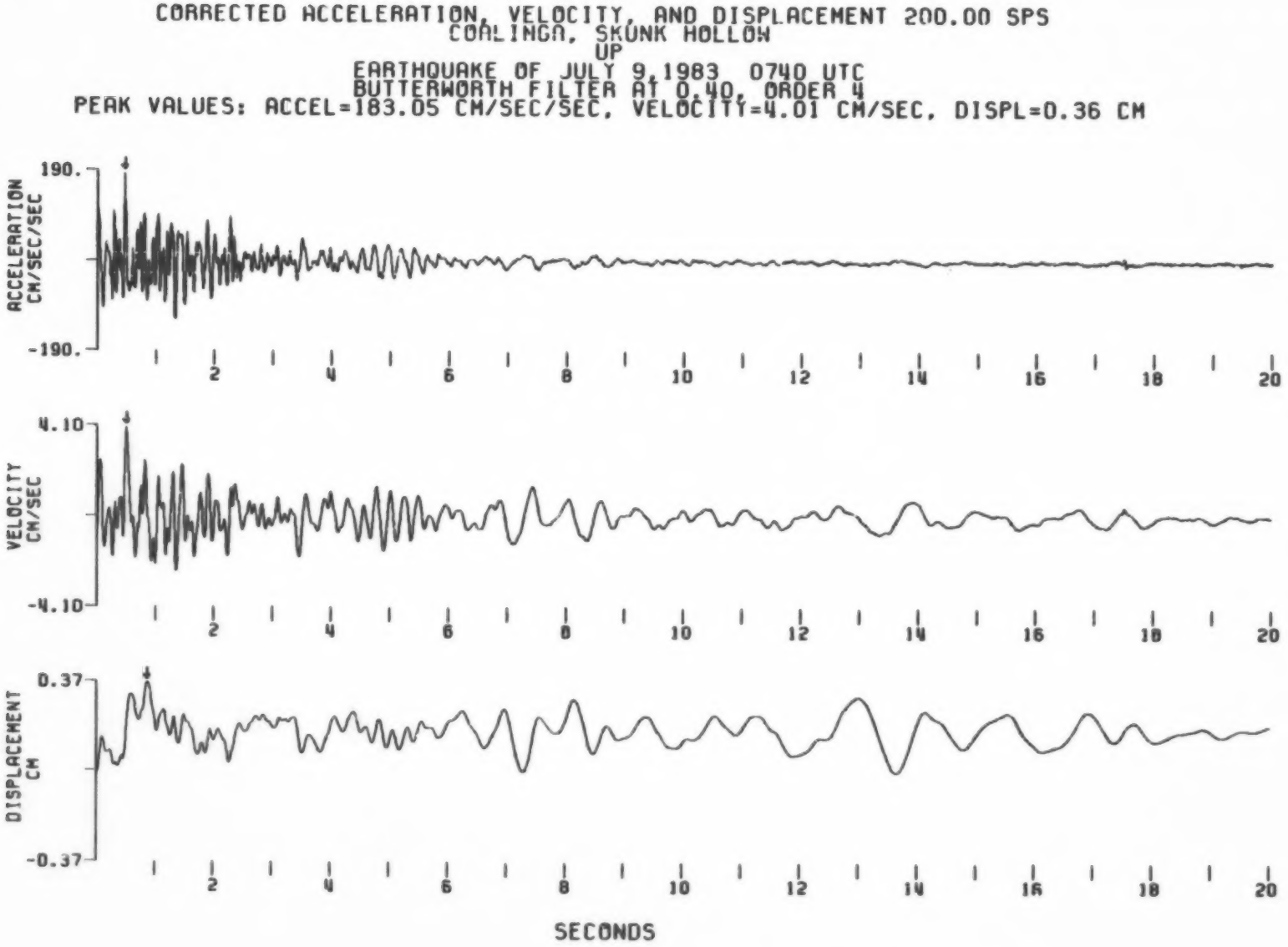

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
CORLINGA, PALMER AVENUE
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=191.03 CM/SEC/SEC, VELOCITY=5.82 CM/SEC, DISPL=-0.43 CM
ACCELERATION CM/SEC/SEC
200.
-200.
VELOCITY CM/SEC
5.90
-5.90
DISPLACEMENT CM
0.44
-0.44
2
4
6
8
10
12
14
16
18
20
SECONDS

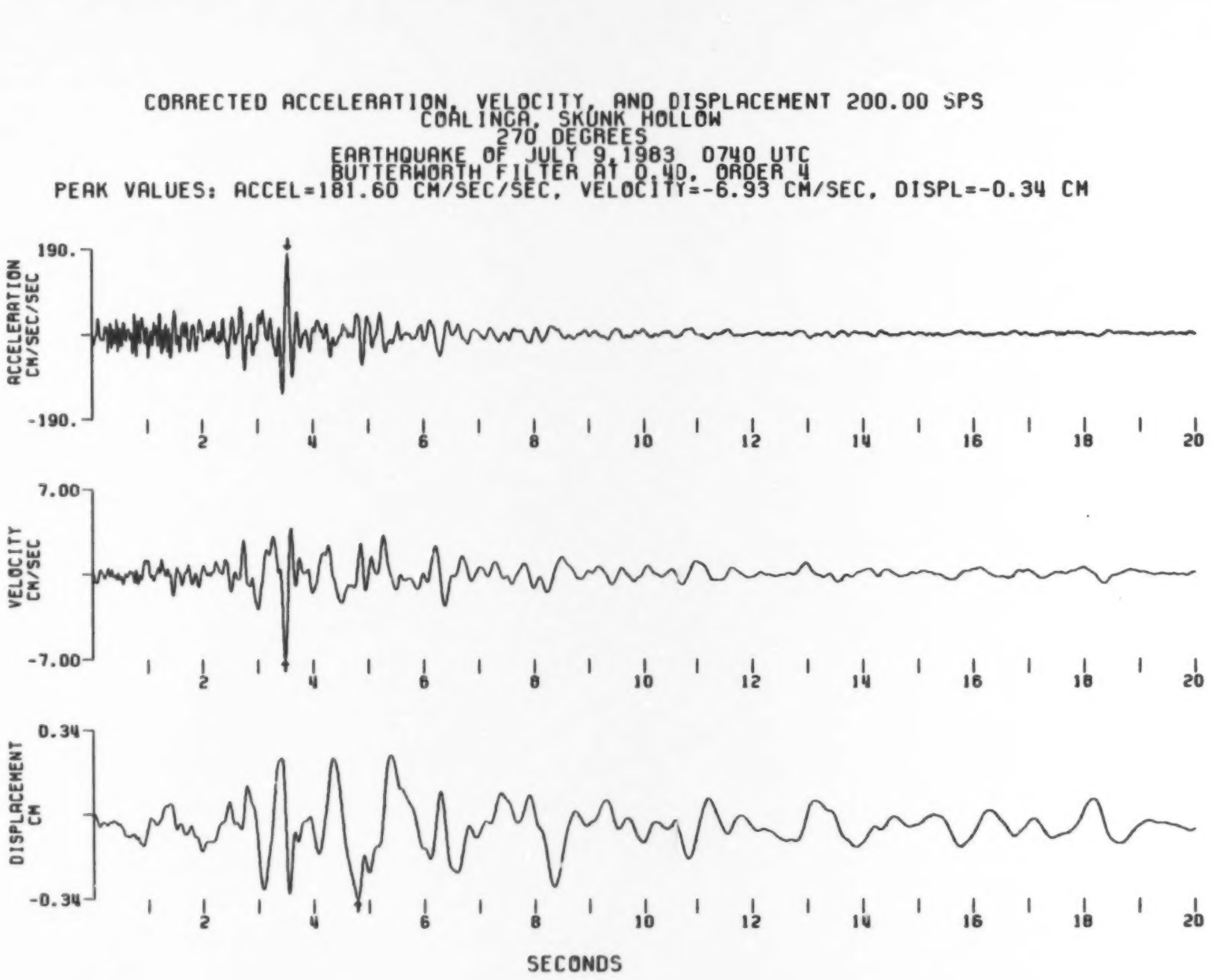

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, PALMER AVENUE
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=77.03 CM/SEC/SEC, VELOCITY=-1.81 CM/SEC, DISPL=-0.14 CM
ACCELERATION CM/SEC/SEC
78.0
-78.0
VELOCITY CM/SEC
1.90
-1.90
DISPLACEMENT CM
0.15
-0.15
2
4
6
8
10
12
14
16
18
20
SECONDS

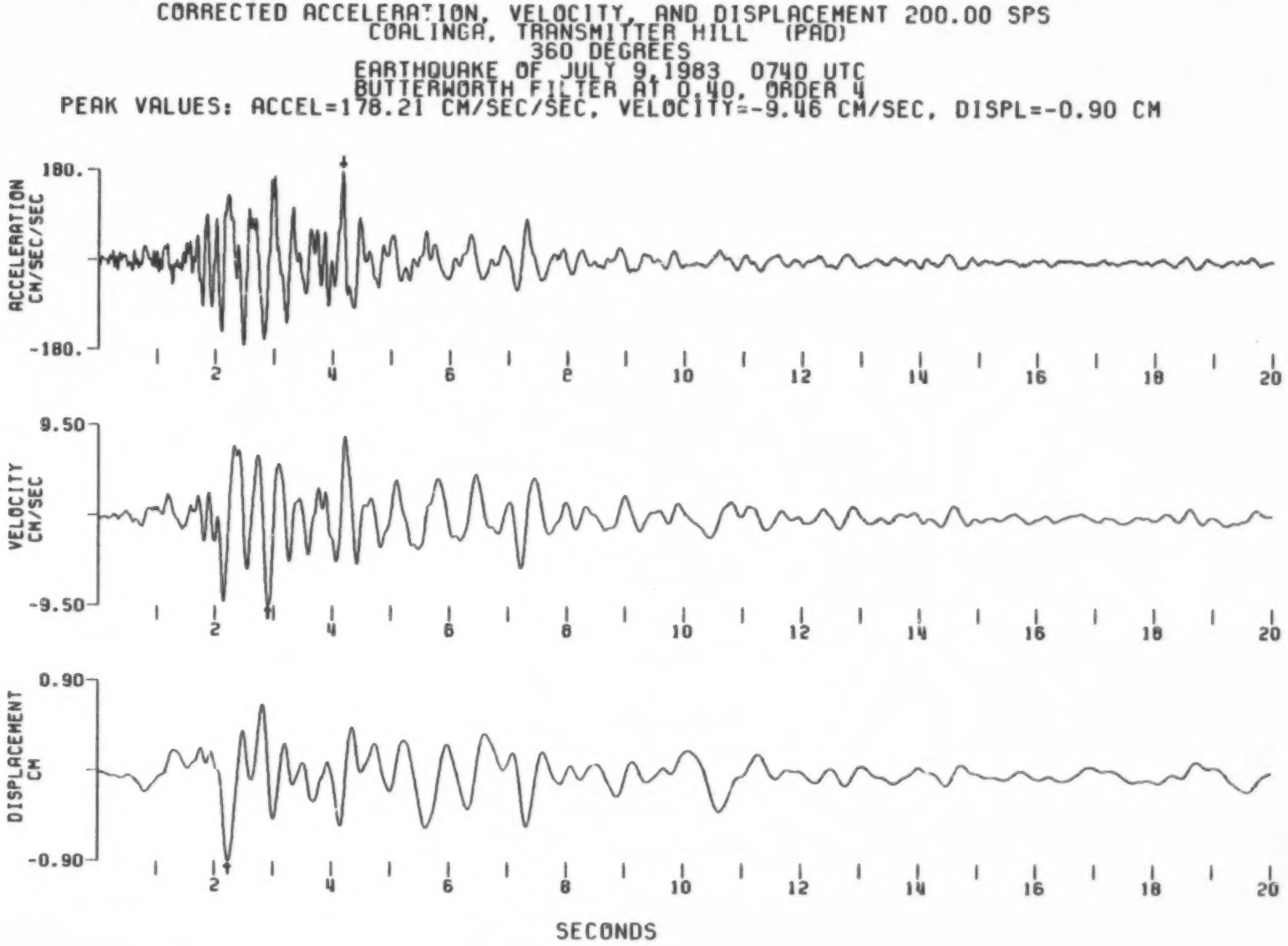

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, PALMER AVENUE
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-109.78 CM/SEC/SEC, VELOCITY=-3.16 CM/SEC, DISPL=0.24 CM
ACCELERATION CM/SEC/SEC
110.
-110.
VELOCITY CM/SEC
3.20
-3.20
DISPLACEMENT CM
0.25
-0.25
2
4
6
8
10
12
14
16
18
20
SECONDS

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, SKUNK HOLLOW
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-144.31 CM/SEC/SEC, VELOCITY=5.17 CM/SEC, DISPL=0.40 CM

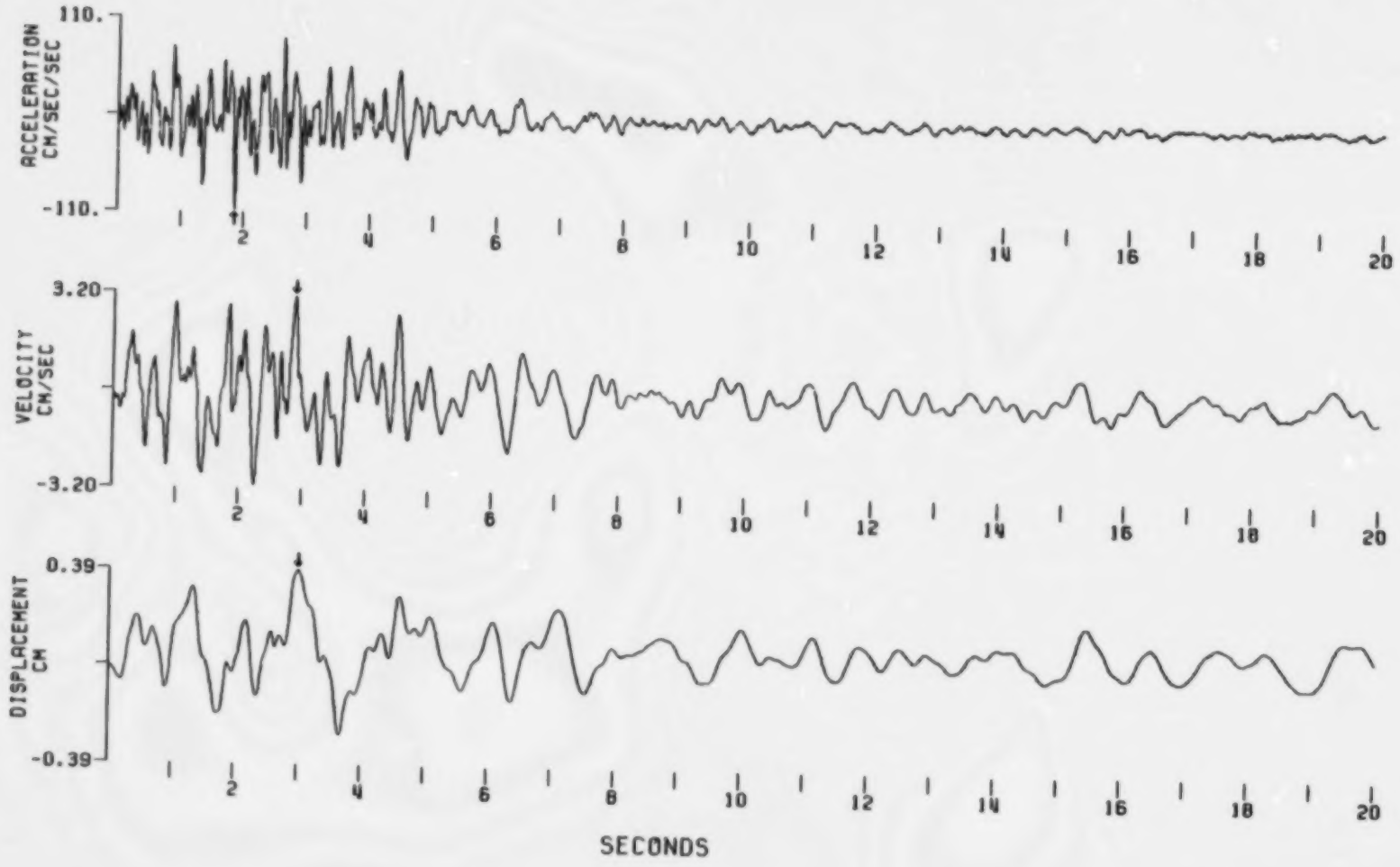



CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, SKUNK HOLLOW
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=183.05 CM/SEC/SEC, VELOCITY=4.01 CM/SEC, DISPL=0.36 CM
ACCELERATION CM/SEC/SEC
190.
-190.
VELOCITY CM/SEC
4.10
-4.10
DISPLACEMENT CM
0.37
-0.37
2
4
6
8
10
12
14
16
18
20
SECONDS

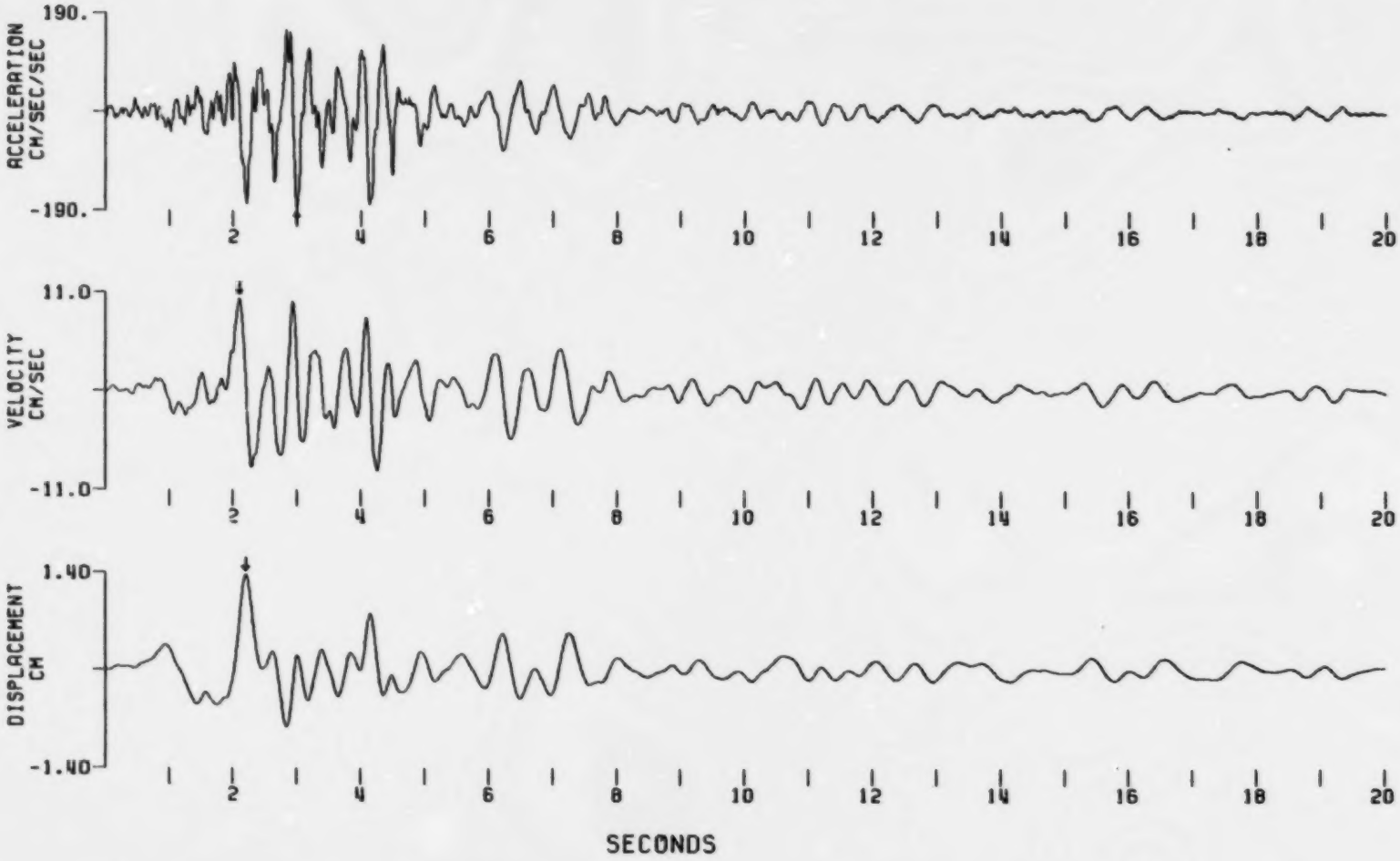

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, SKUNK HOLLOW
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=181.60 CM/SEC/SEC, VELOCITY=-6.93 CM/SEC, DISPL=-0.34 CM
ACCELERATION CM/SEC/SEC
190.
-190.
VELOCITY CM/SEC
7.00
-7.00
DISPLACEMENT CM
0.34
-0.34
2
4
6
8
10
12
14
16
18
20
SECONDS

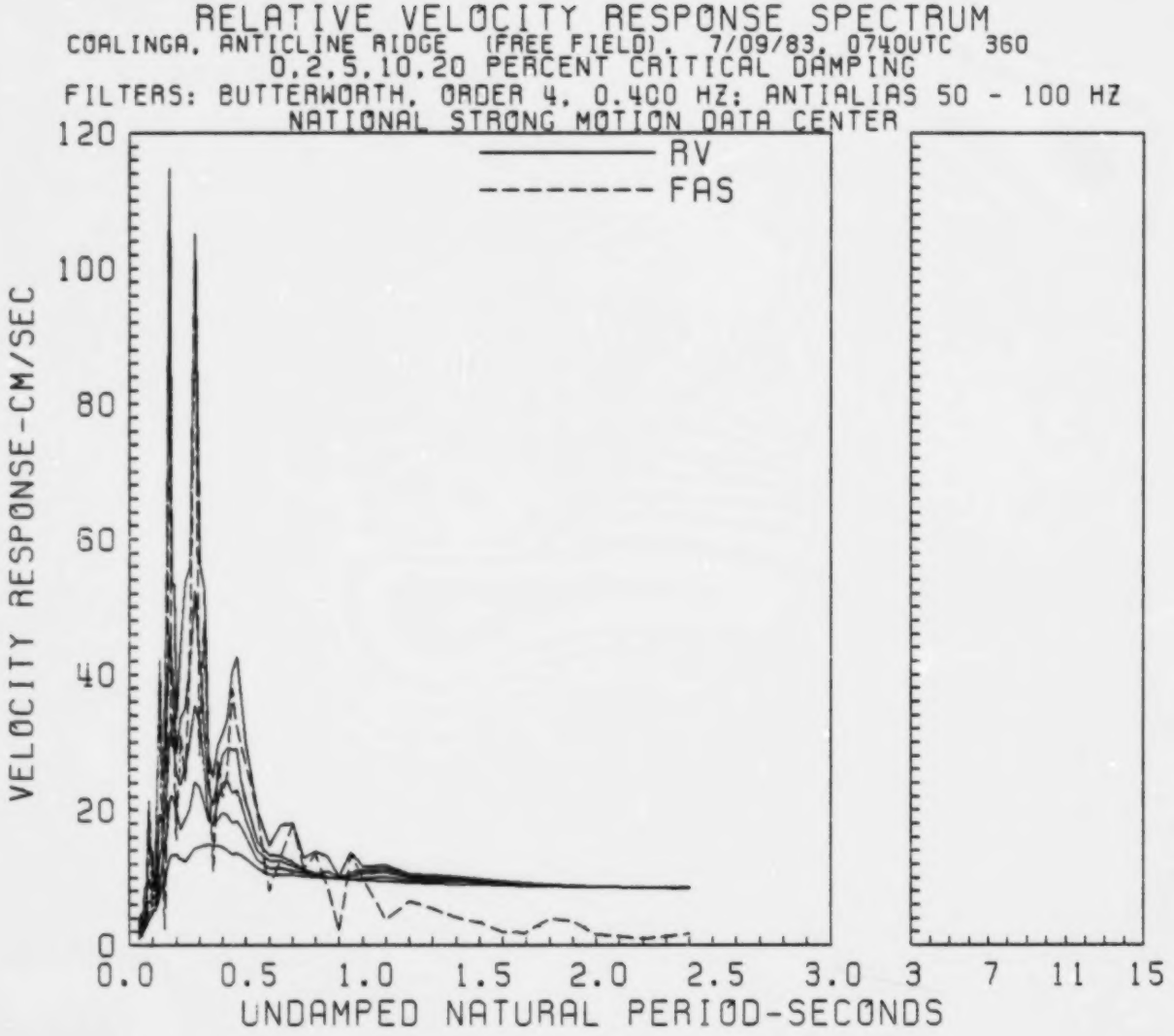

CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, TRANSMITTER HILL (PAD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=178.21 CM/SEC/SEC, VELOCITY=-9.46 CM/SEC, DISPL=-0.90 CM
ACCELERATION CM/SEC/SEC
180.
-180.
VELOCITY CM/SEC
9.50
-9.50
DISPLACEMENT CM
0.90
-0.90
2
4
6
8
10
12
14
16
18
20
SECONDS

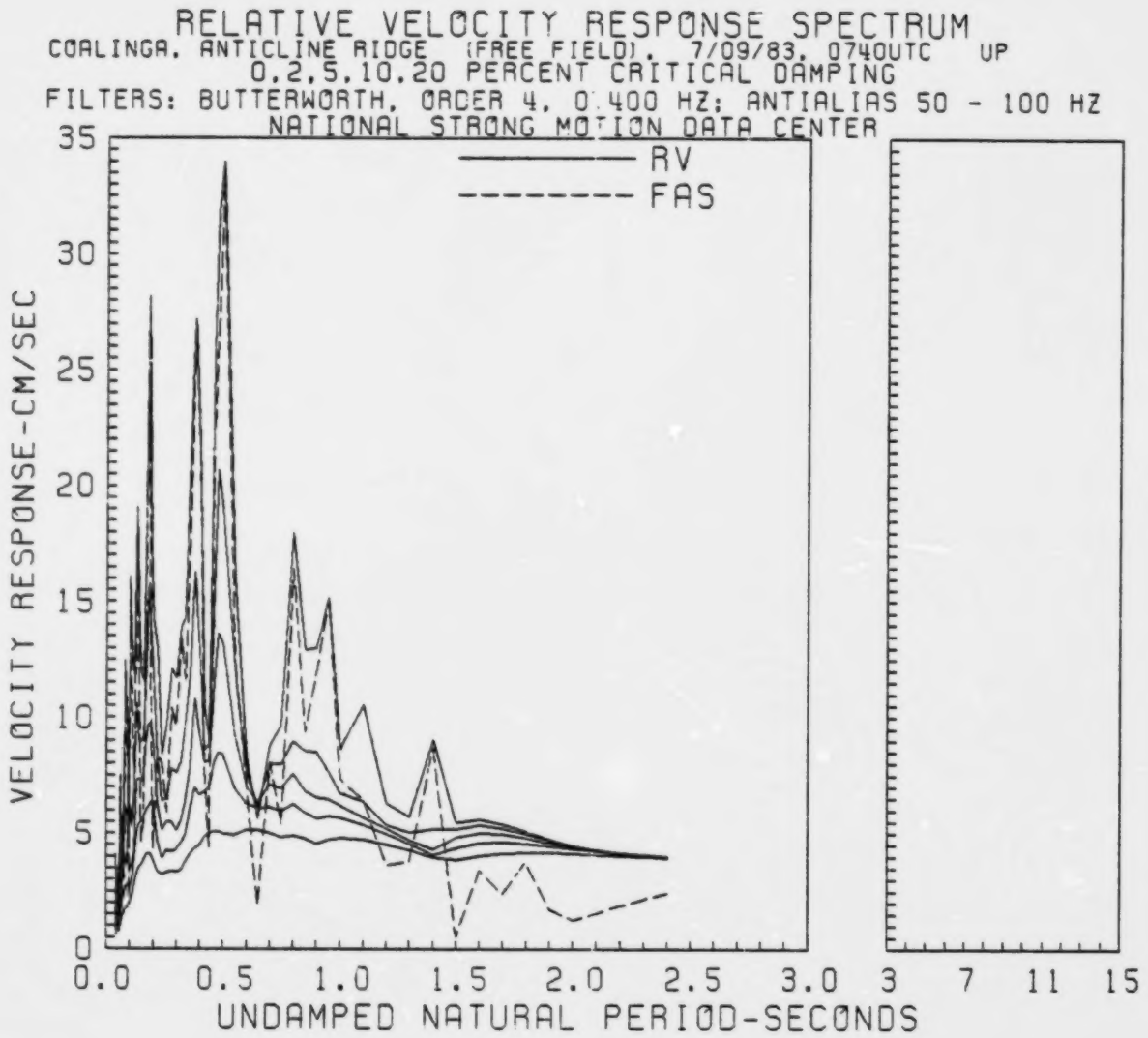
CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, TRANSMITTER HILL (PAD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-107.33 CM/SEC/SEC, VELOCITY=3.10 CM/SEC, DISPL=0.39 CM

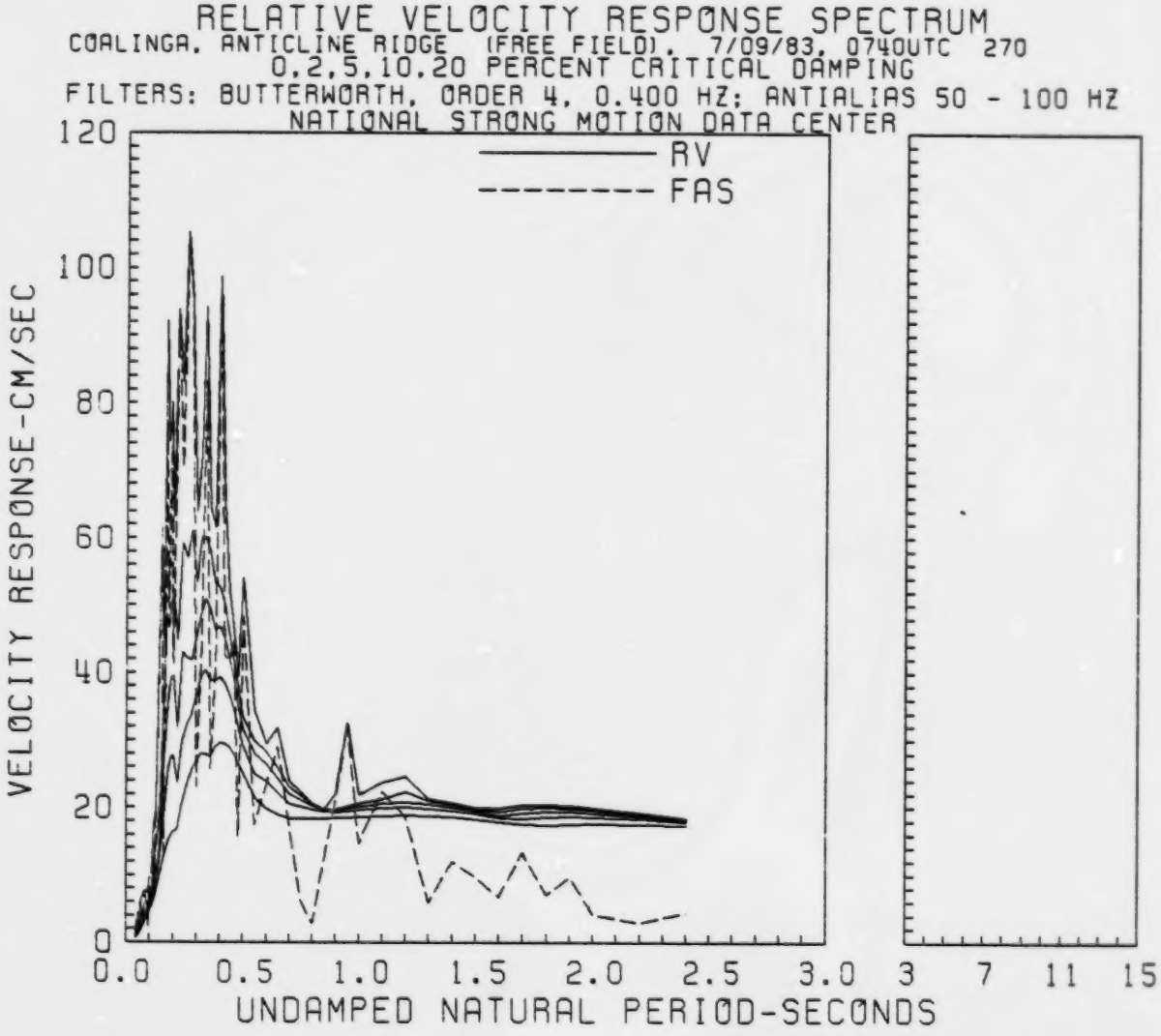


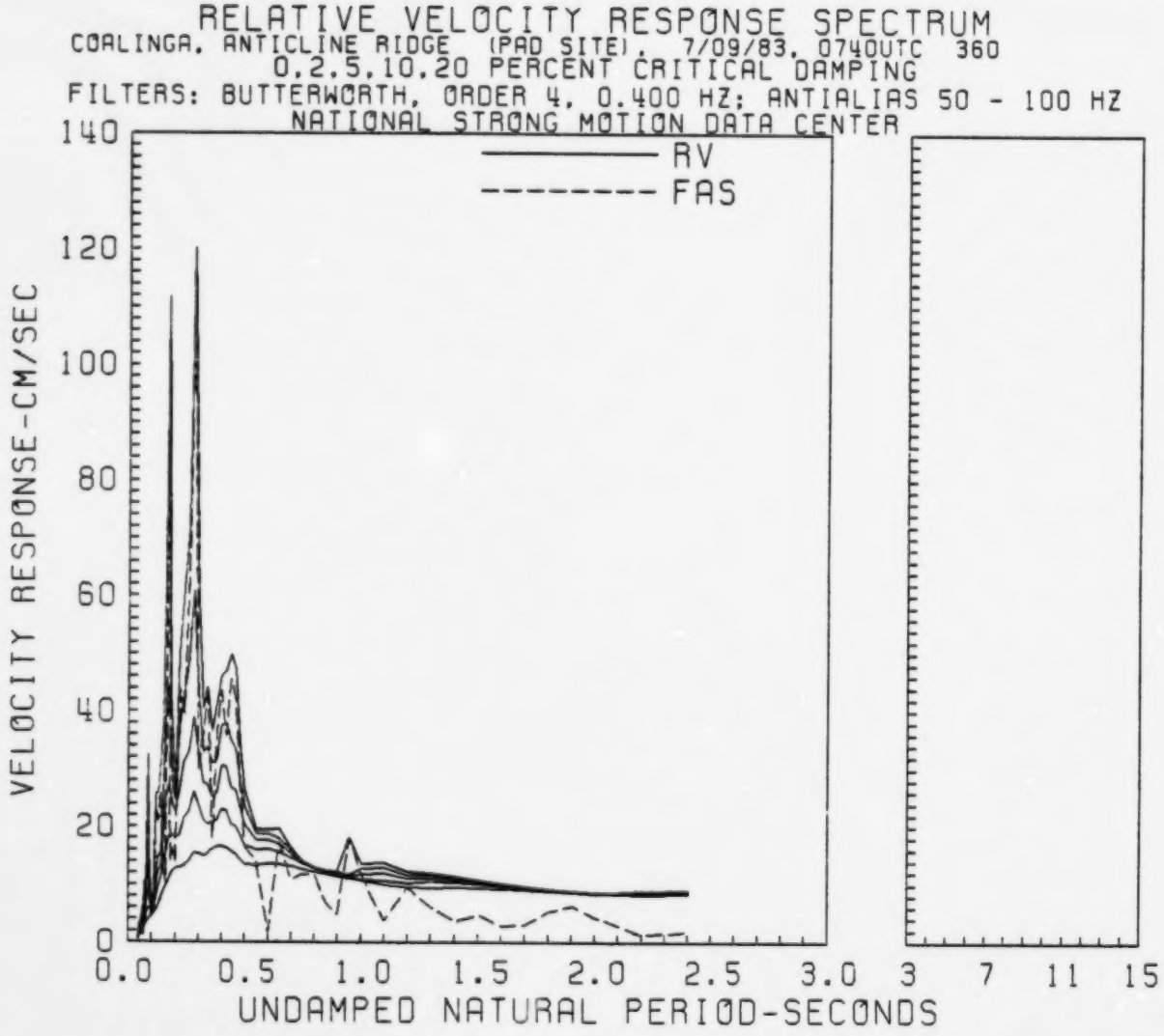
CORRECTED ACCELERATION, VELOCITY, AND DISPLACEMENT 200.00 SPS
COALINGA, TRANSMITTER HILL (PAD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
PEAK VALUES: ACCEL=-187.89 CM/SEC/SEC, VELOCITY=10.31 CM/SEC, DISPL=1.36 CM

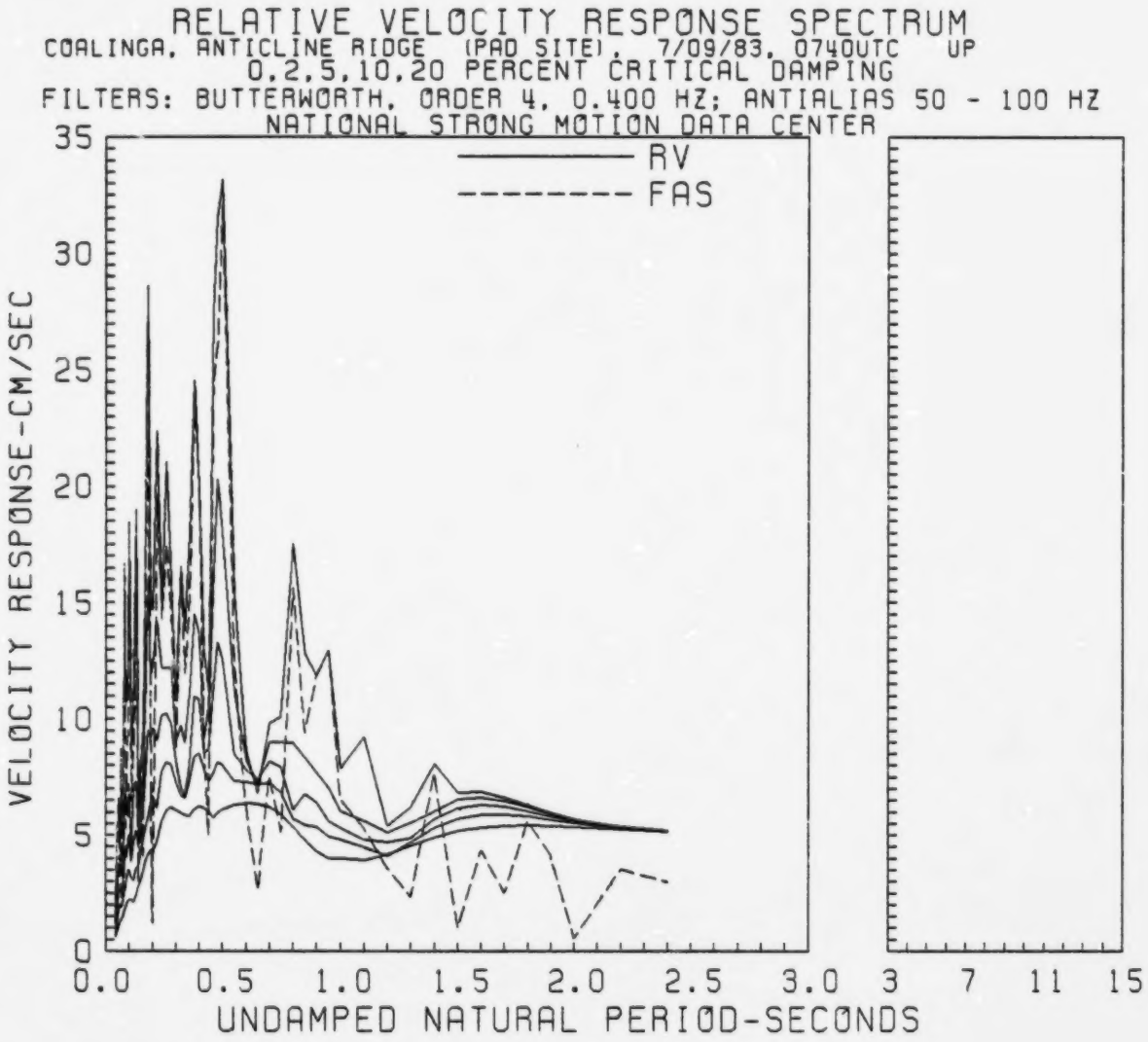


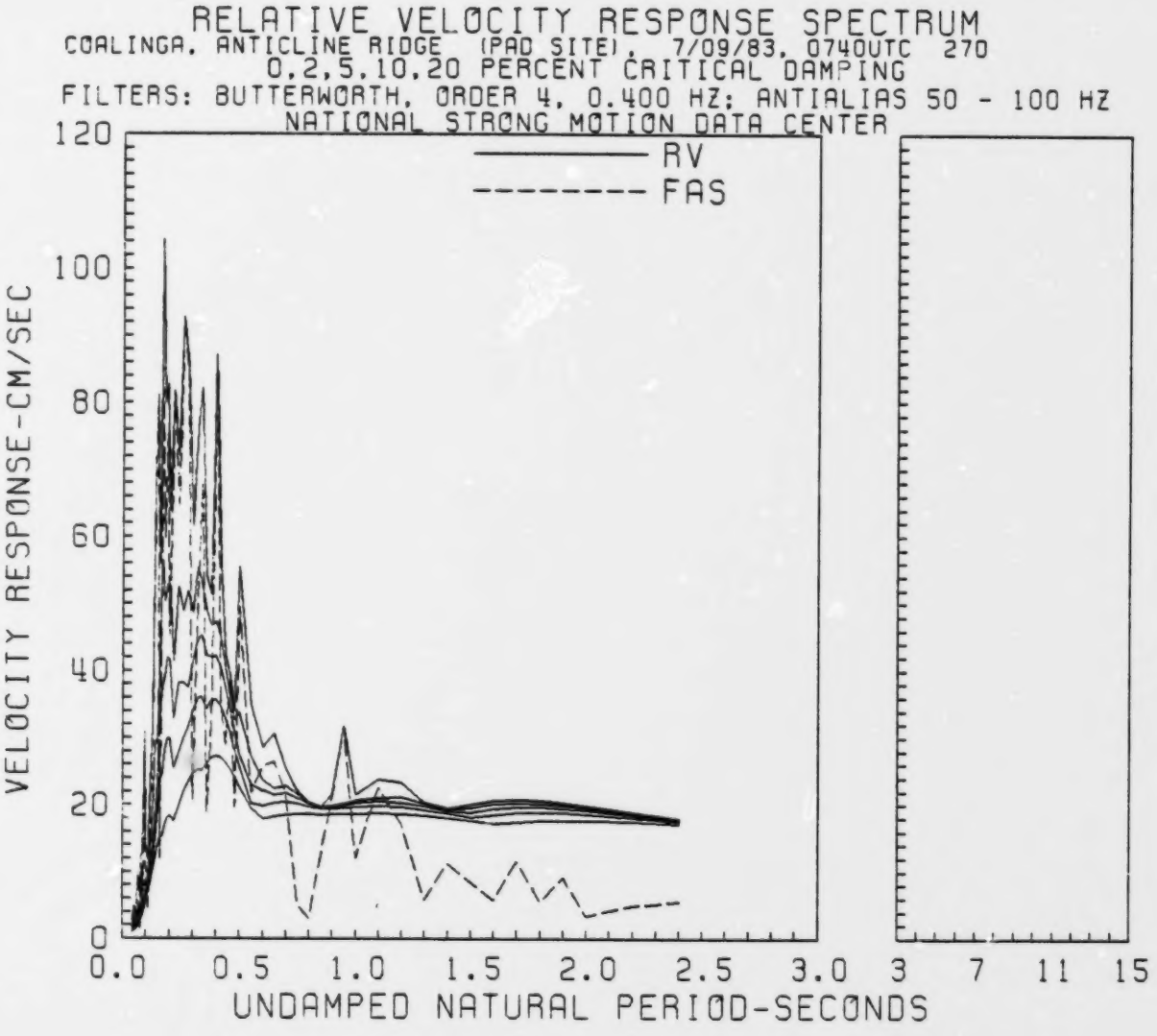

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, ANTICLINE RIDGE (FREE FIELD), 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
120
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

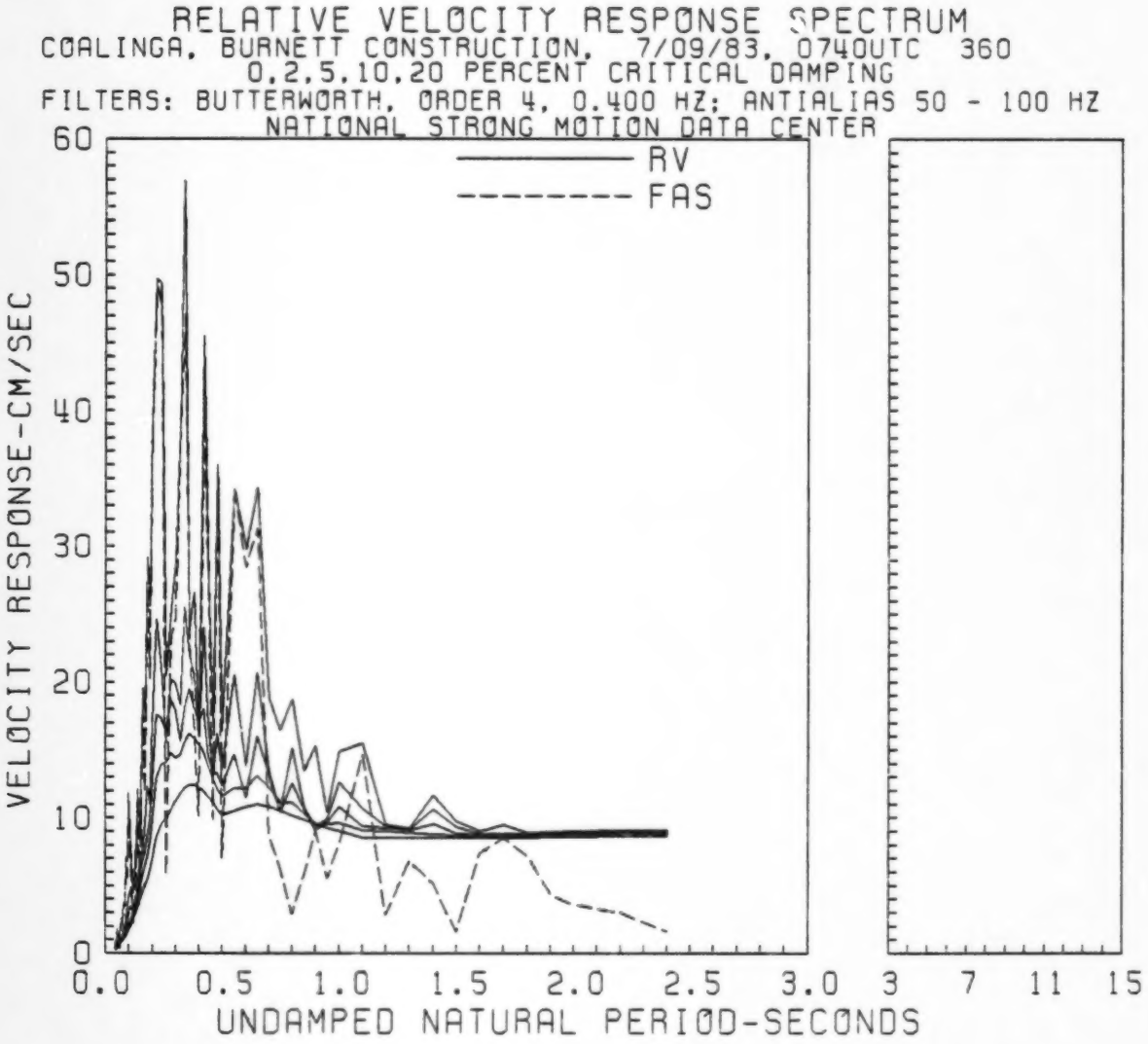

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, ANTICLINE RIDGE (FREE FIELD), 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
0
5
10
15
20
25
30
35
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15

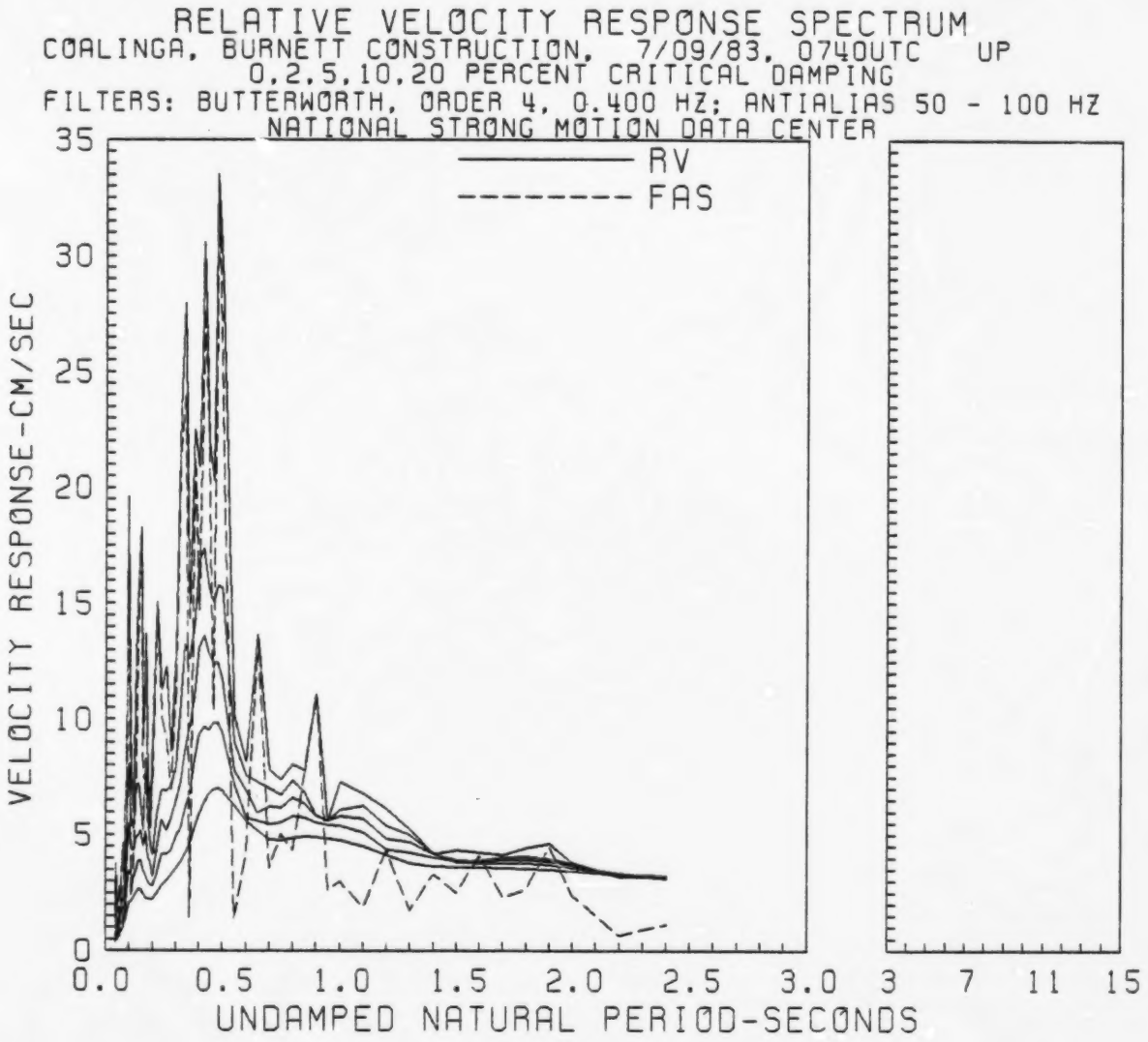

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, ANTICLINE RIDGE (FREE FIELD), 7/09/83, 0740UTC 270
0.2,5.10.20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
120
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

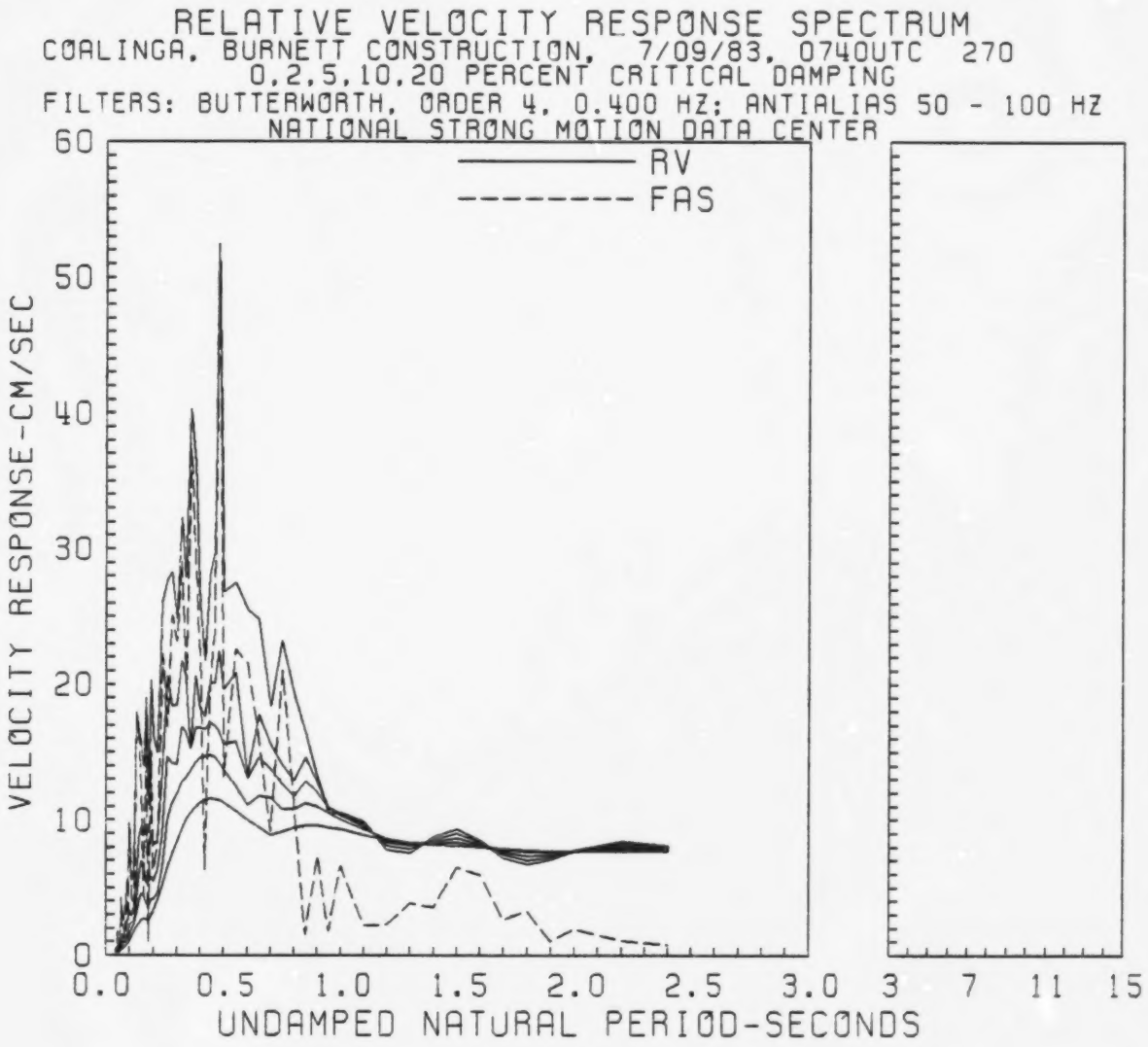

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, ANTICLINE RIDGE (PAD SITE), 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
0
20
40
60
80
100
120
140
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15

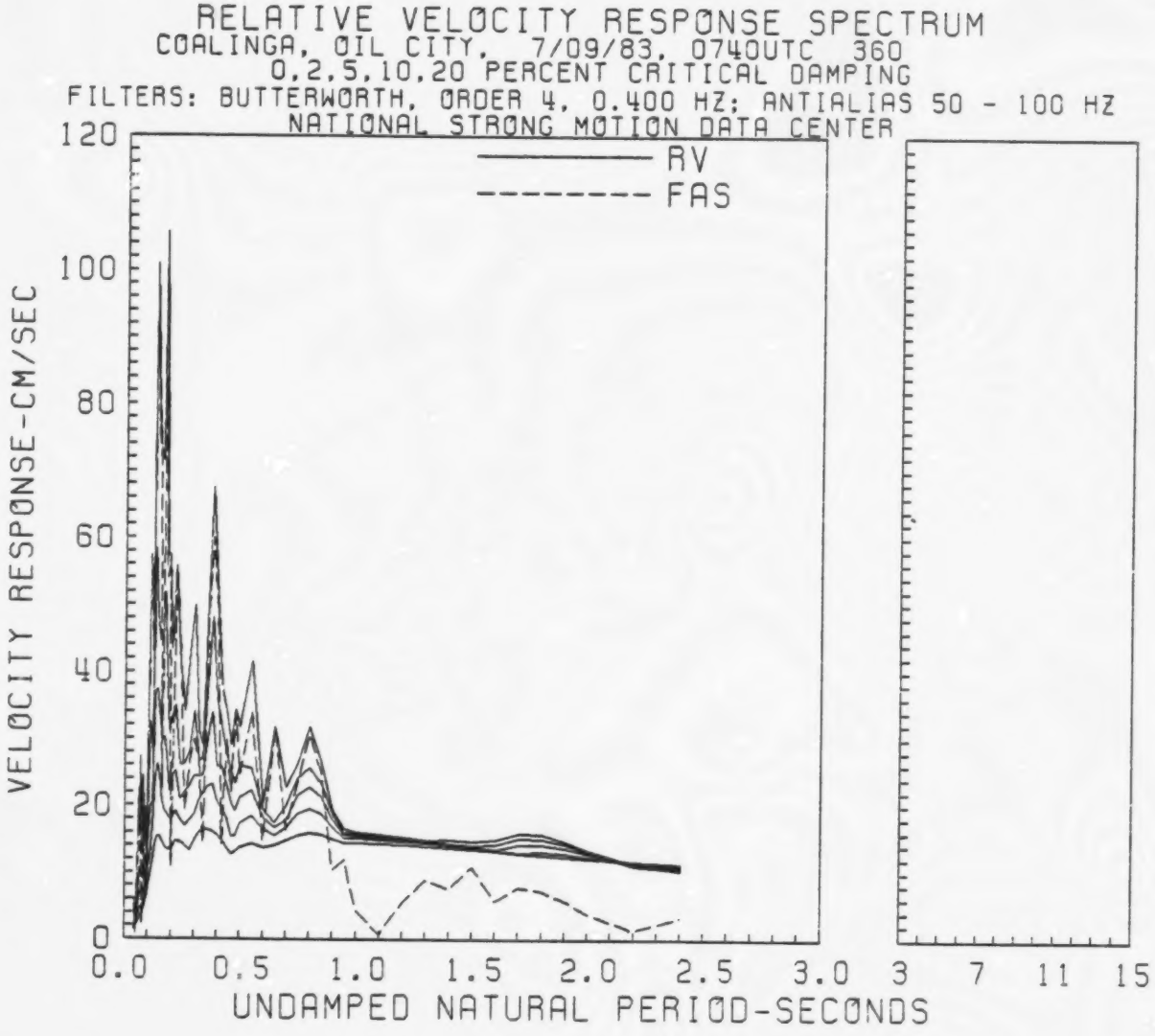

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, ANTICLINE RIDGE (PAD SITE), 7/09/83, 0740UTC UP
0.2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
5
10
15
20
25
30
35
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

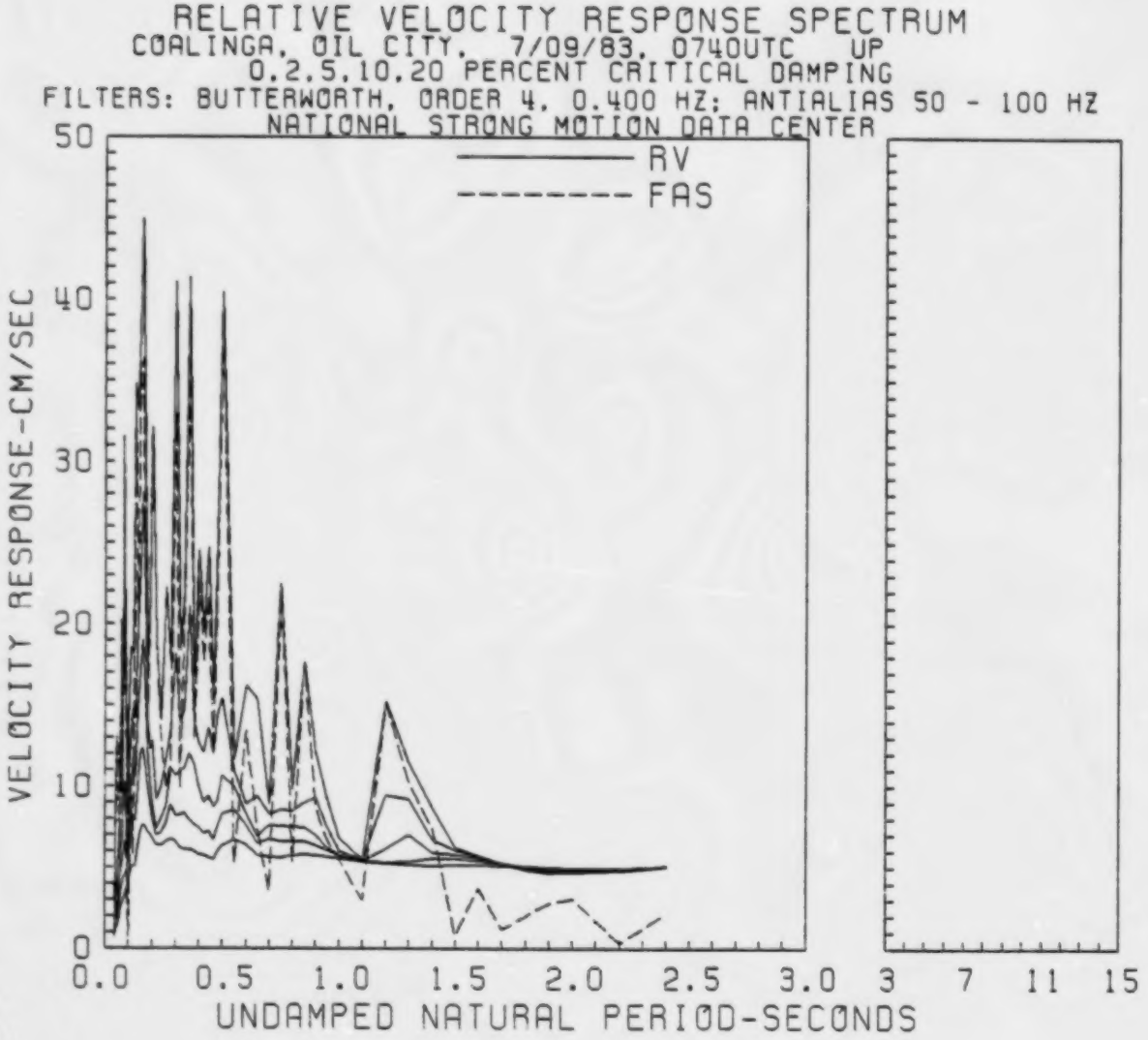

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, ANTICLINE RIDGE (PAD SITE), 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
120
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

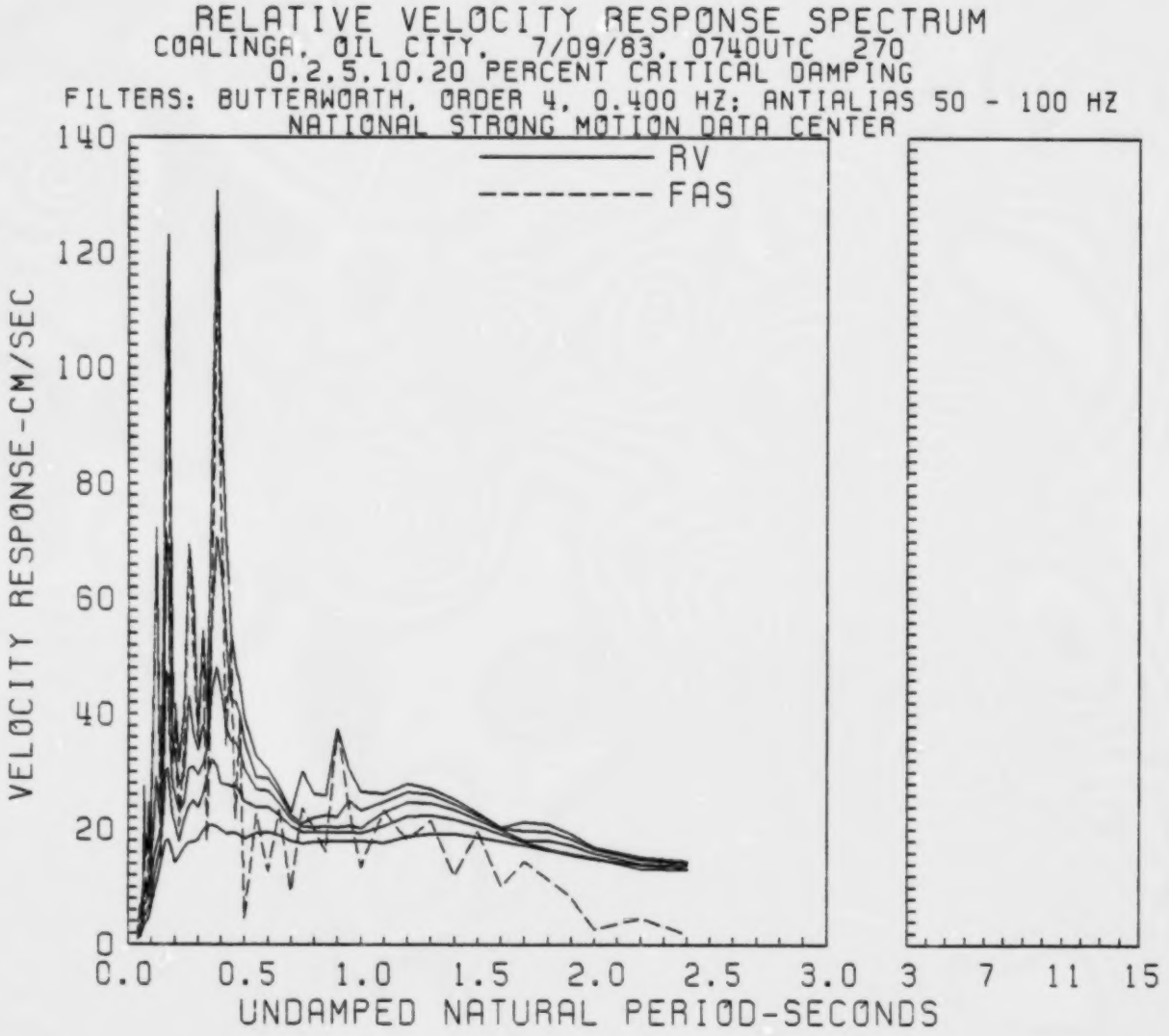

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, BURNETT CONSTRUCTION, 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
0
10
20
30
40
50
60
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15

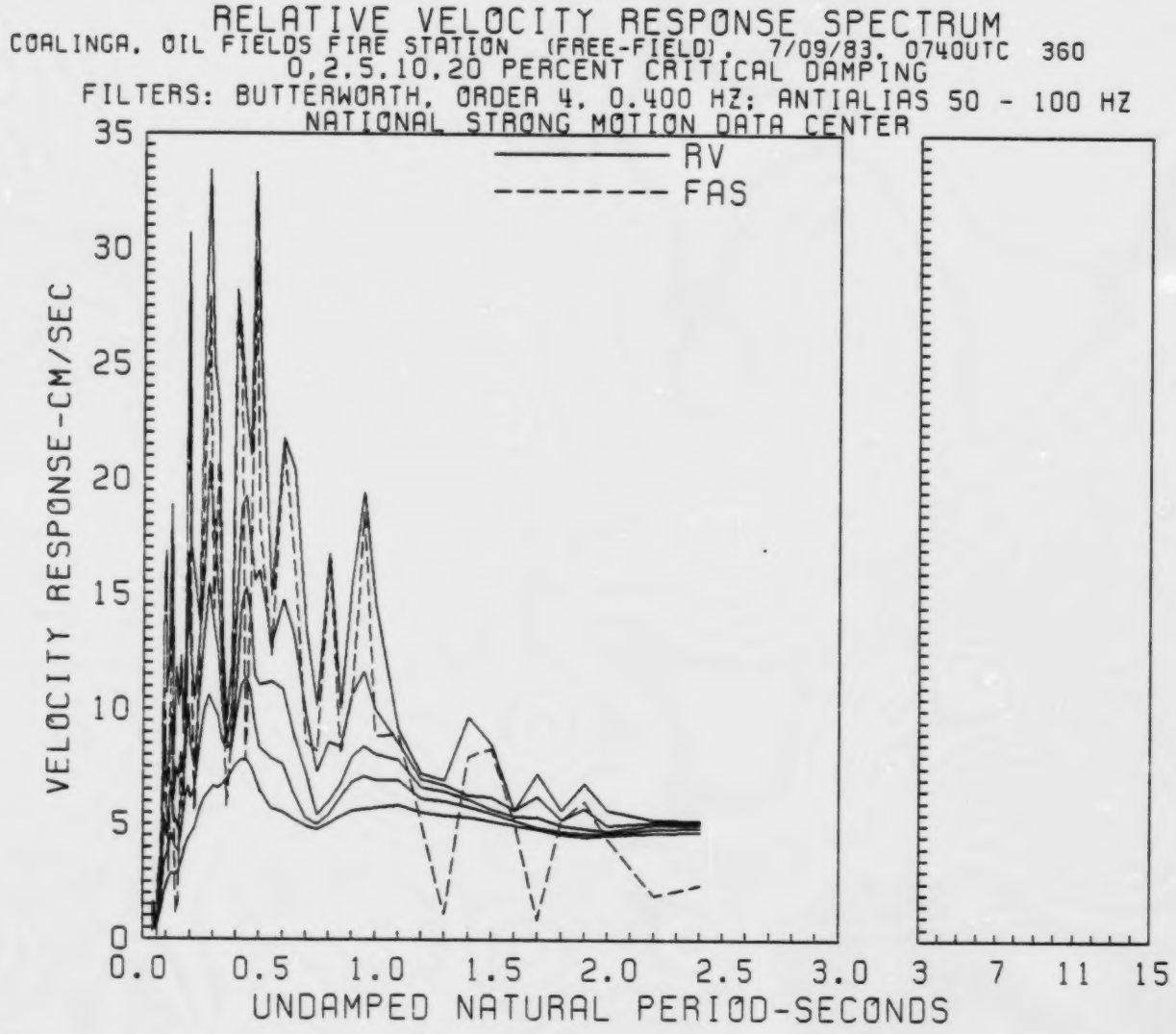

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, BURNETT CONSTRUCTION, 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
5
10
15
20
25
30
35
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

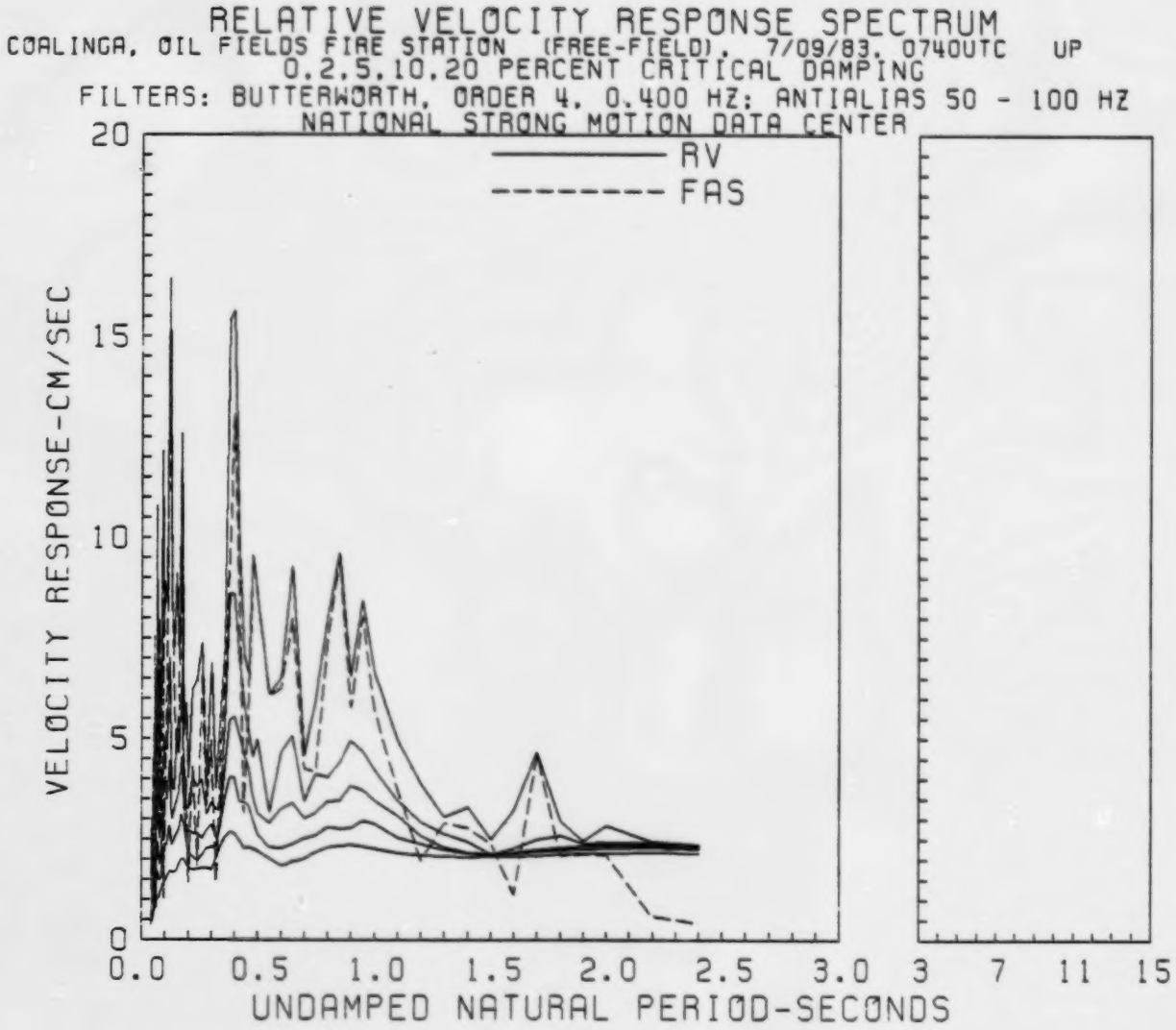

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, BURNETT CONSTRUCTION, 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
60
50
40
30
20
10
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

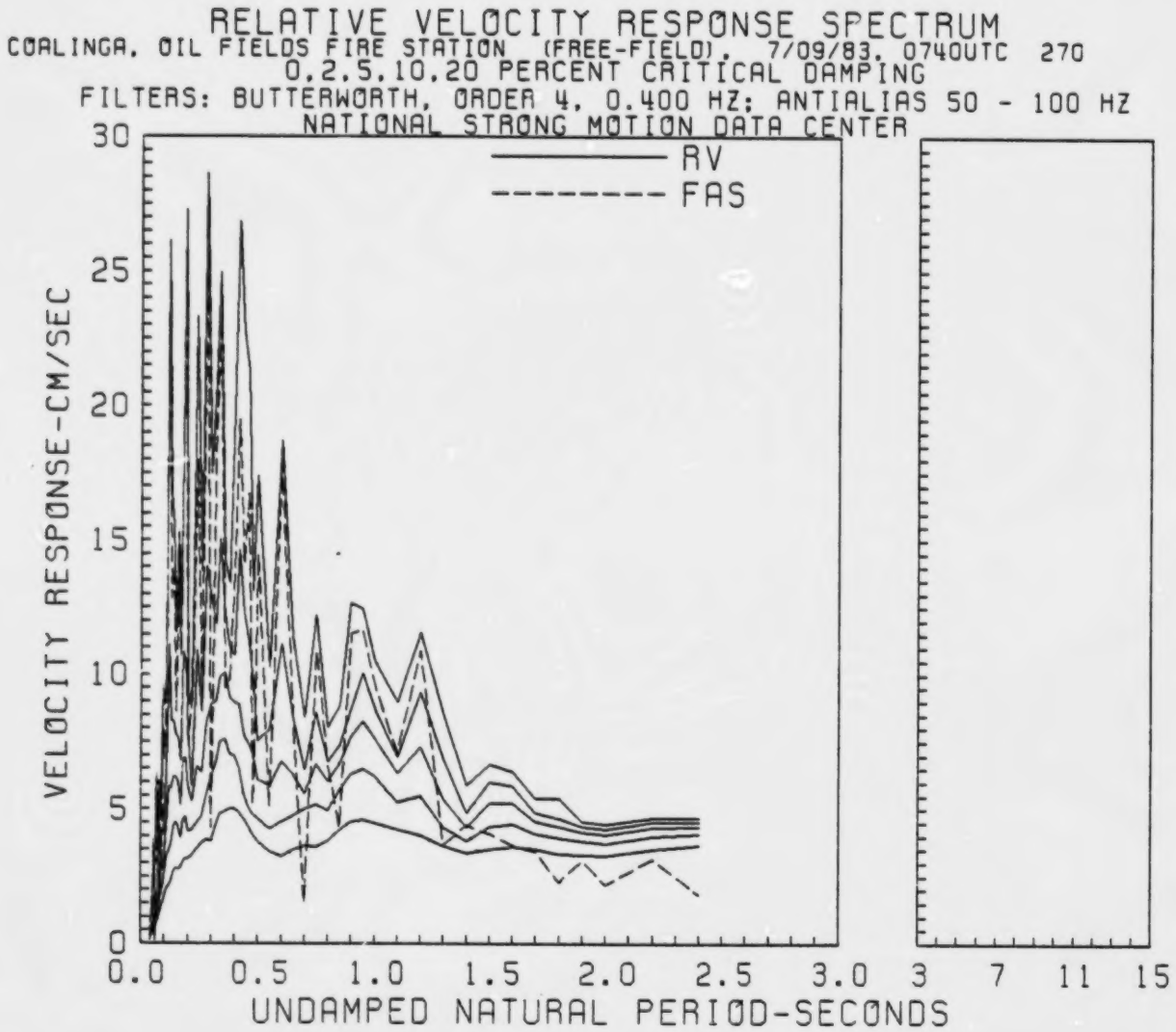

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, OIL CITY, 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
120
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

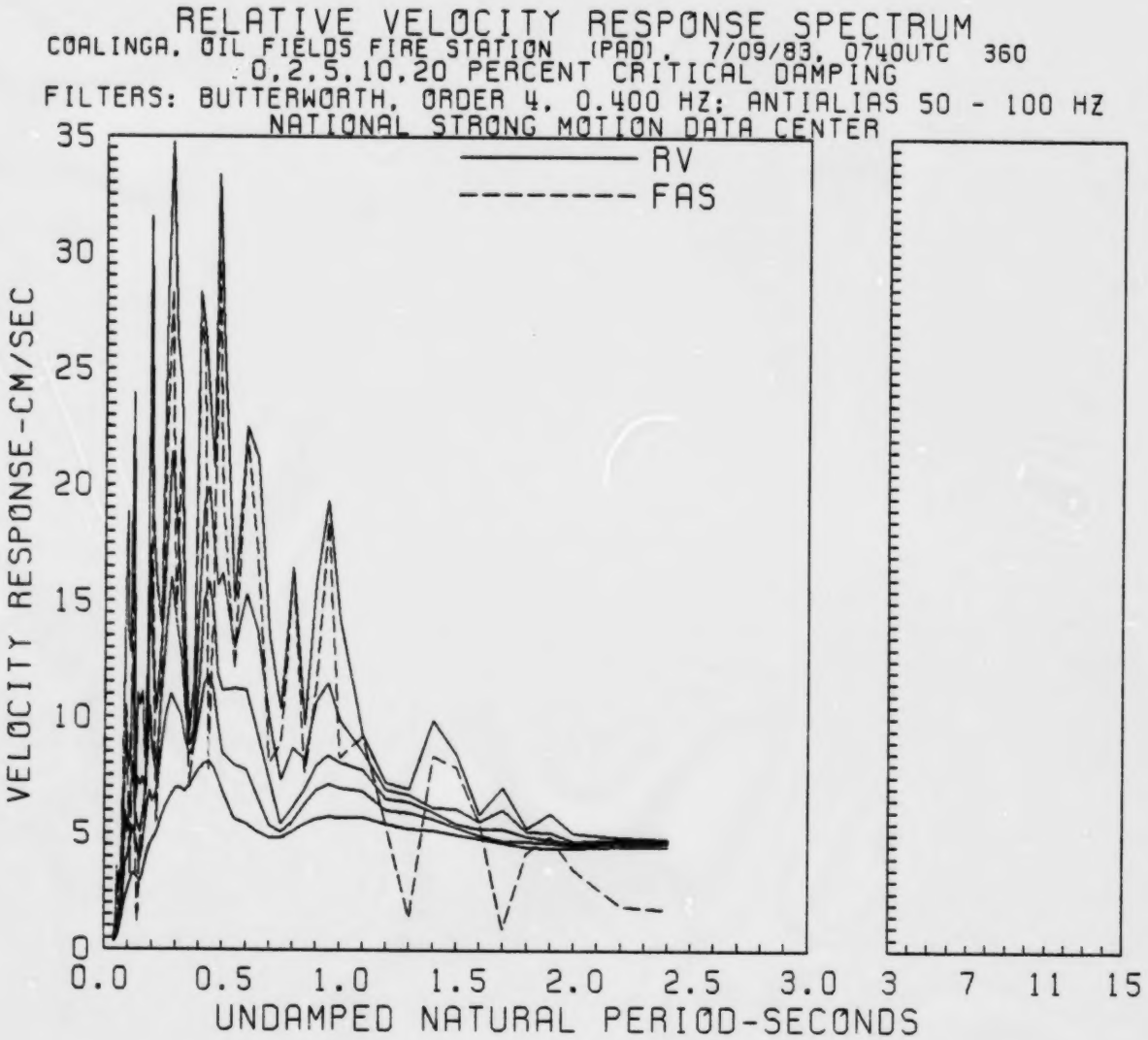

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, OIL CITY, 7/09/83, 0740UTC UP
0.2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
10
20
30
40
50
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

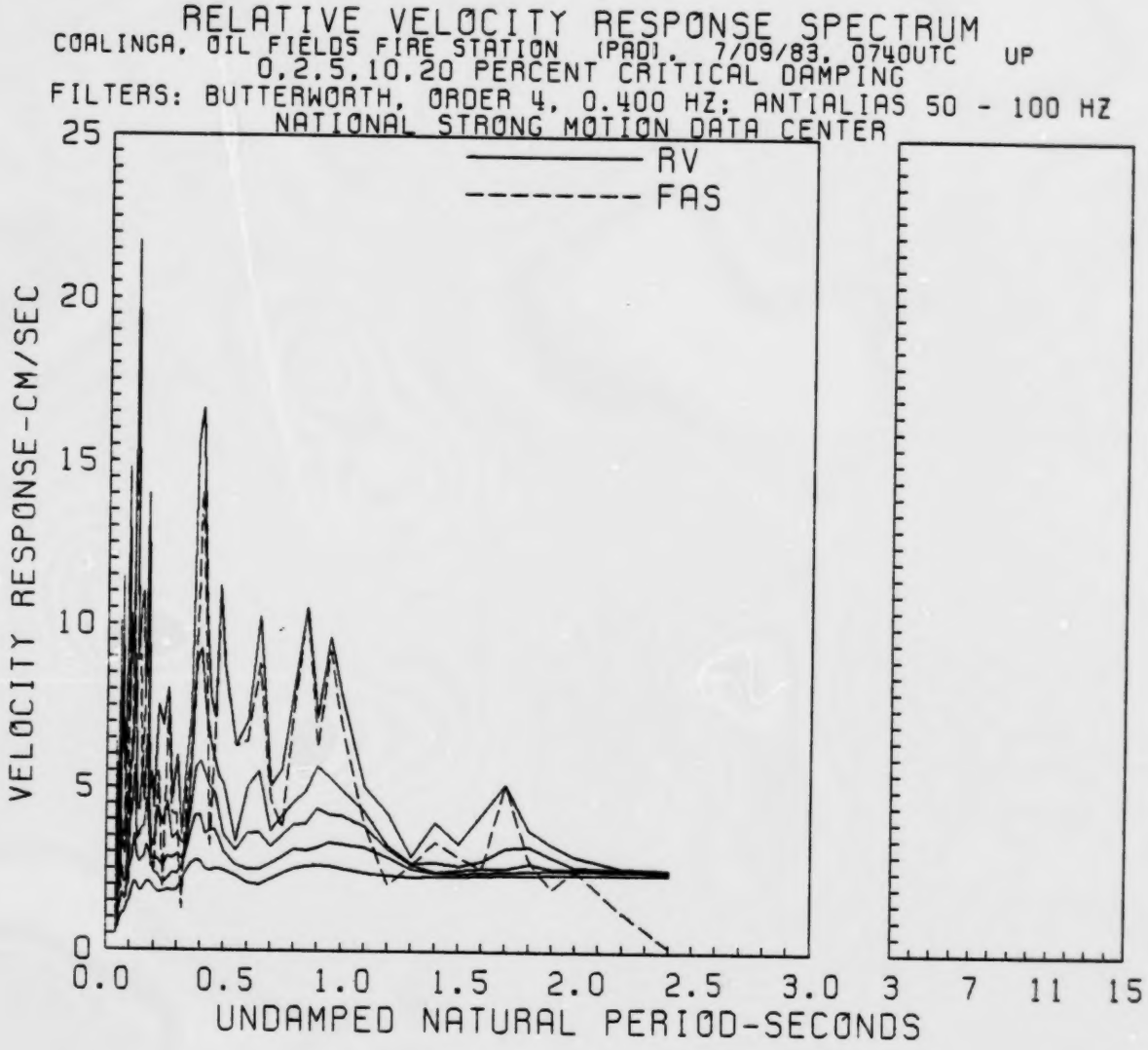

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, OIL CITY, 7/09/83, 0740UTC 270
0.2,5.10.20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
20
40
60
80
100
120
140
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

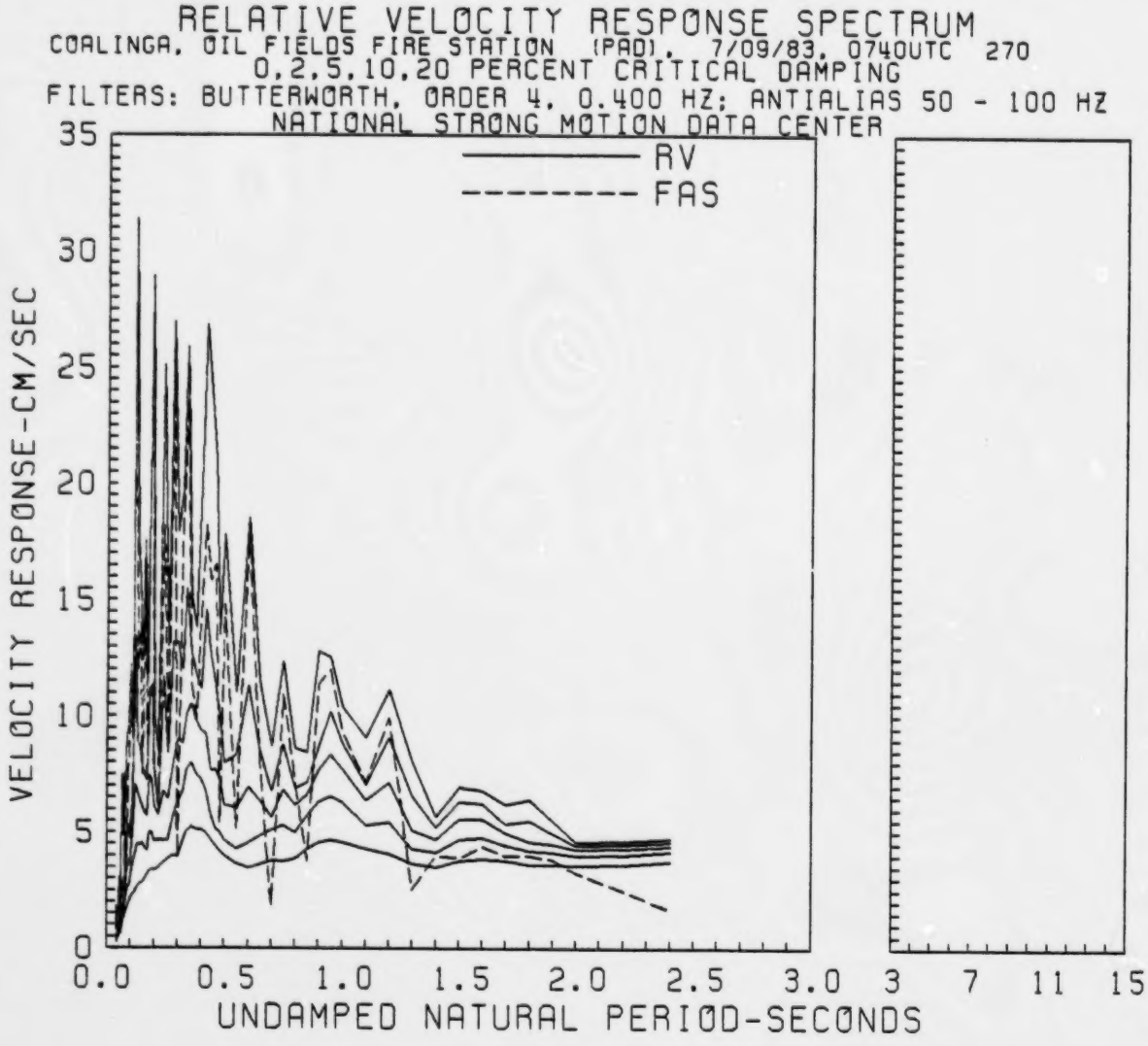

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD), 7/09/83, 0740UTC 360
0,2.5.10.20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
5
10
15
20
25
30
35
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

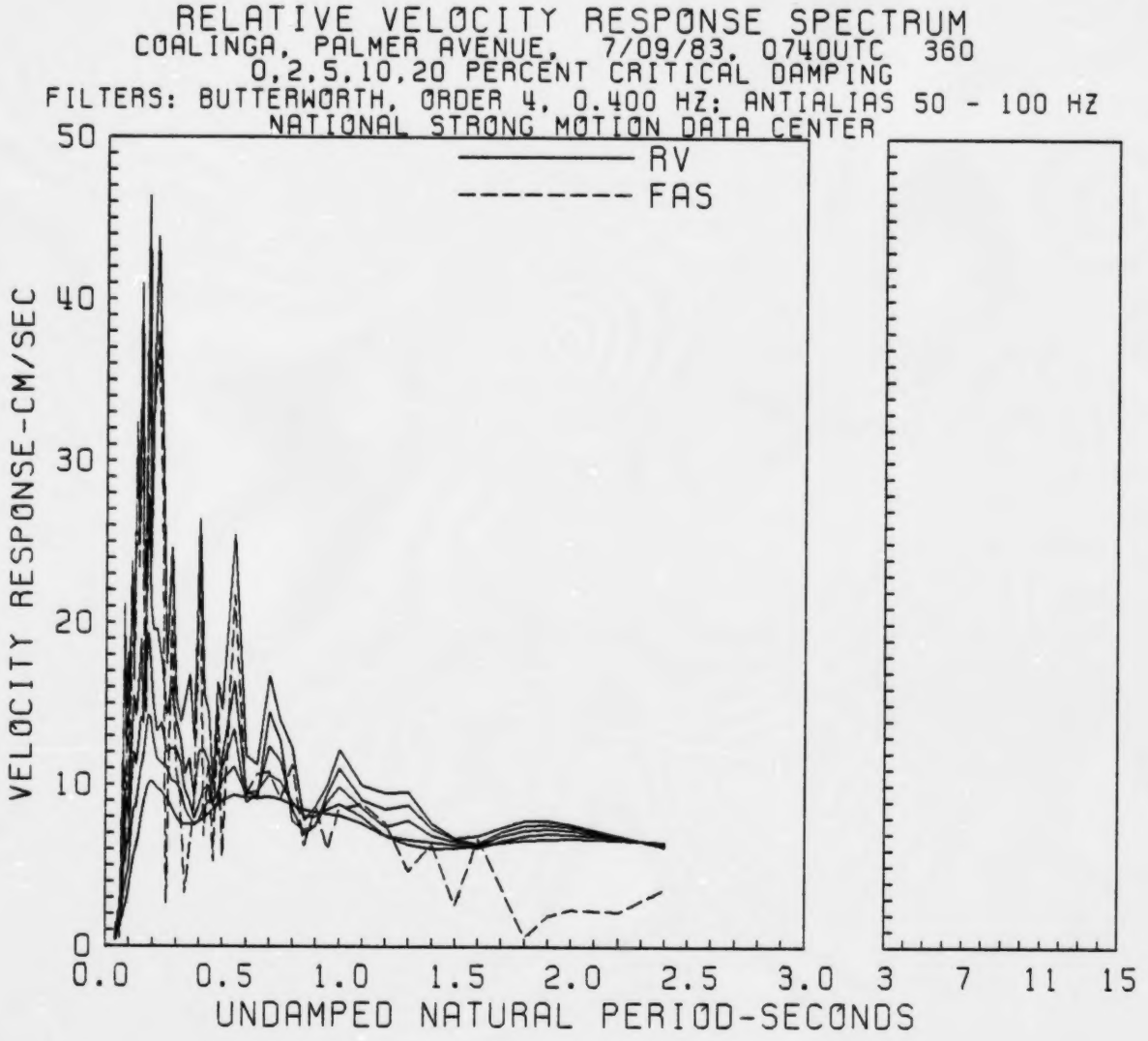

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD), 7/09/83, 0740UTC UP
0.2.5.10.20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
0
5
10
15
20
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15

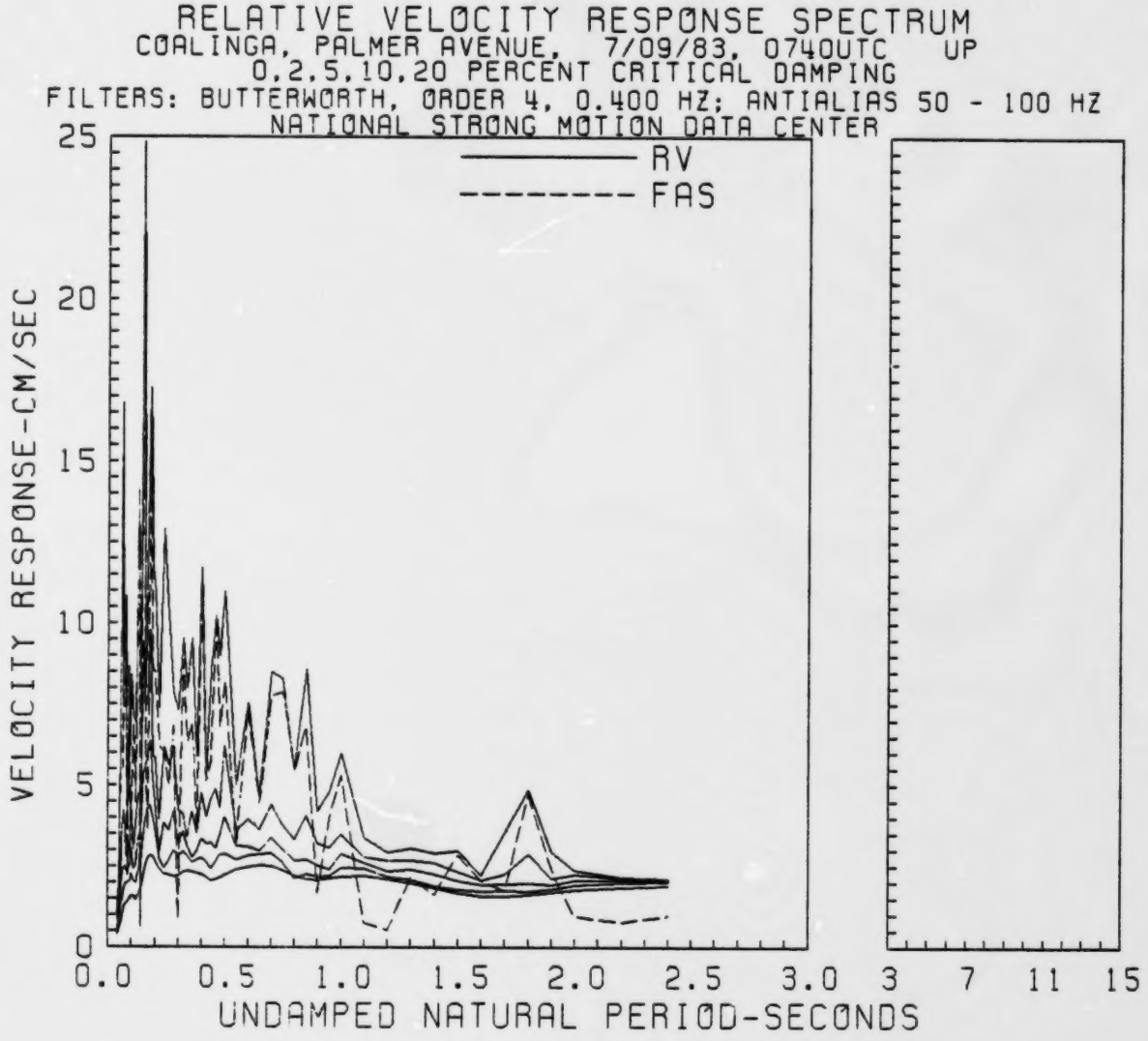

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD), 7/09/83, 0740UTC 270
0.2.5.10.20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
0
5
10
15
20
25
30
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15

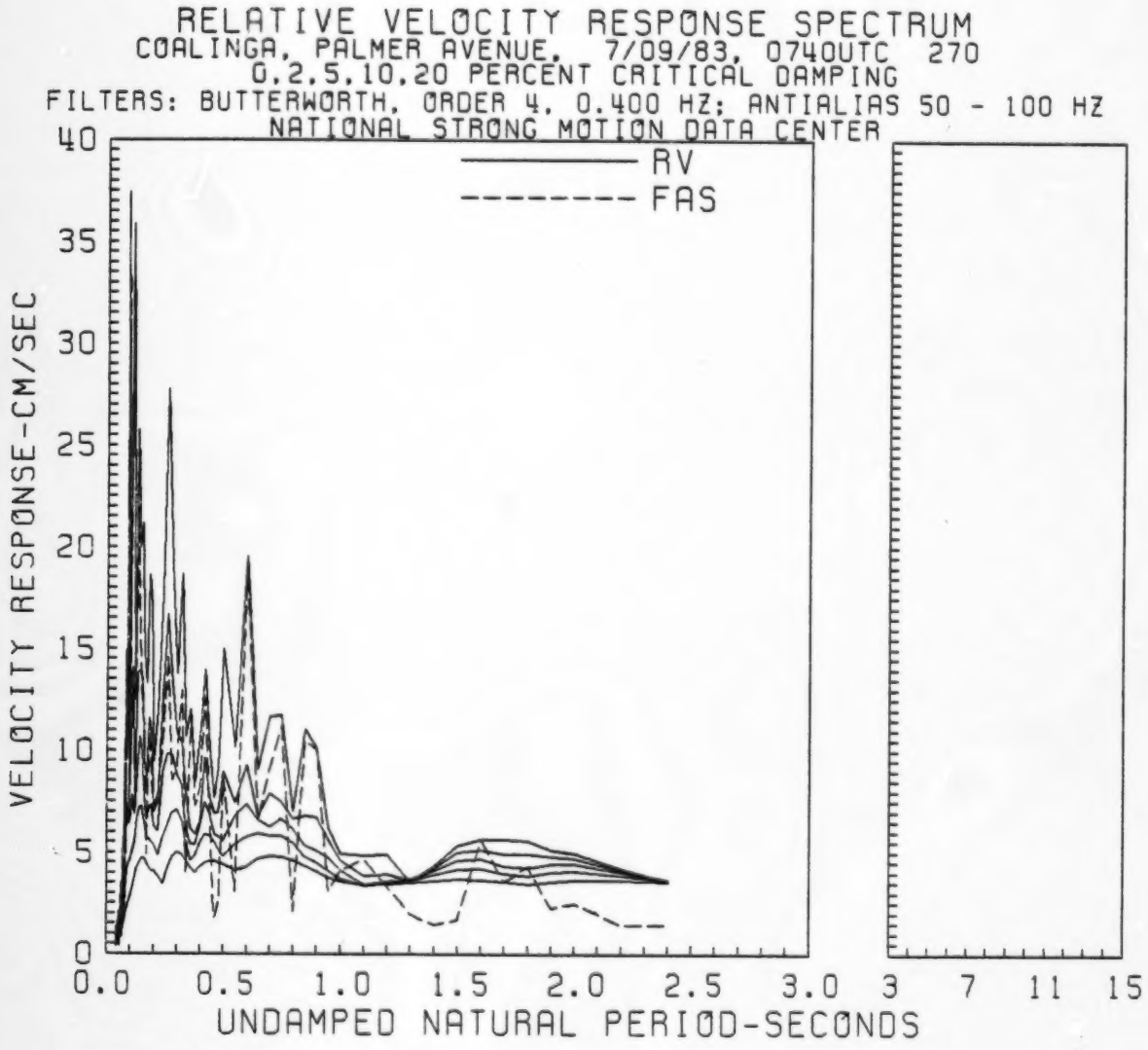

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, OIL FIELDS FIRE STATION (PAD), 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
5
10
15
20
25
30
35
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

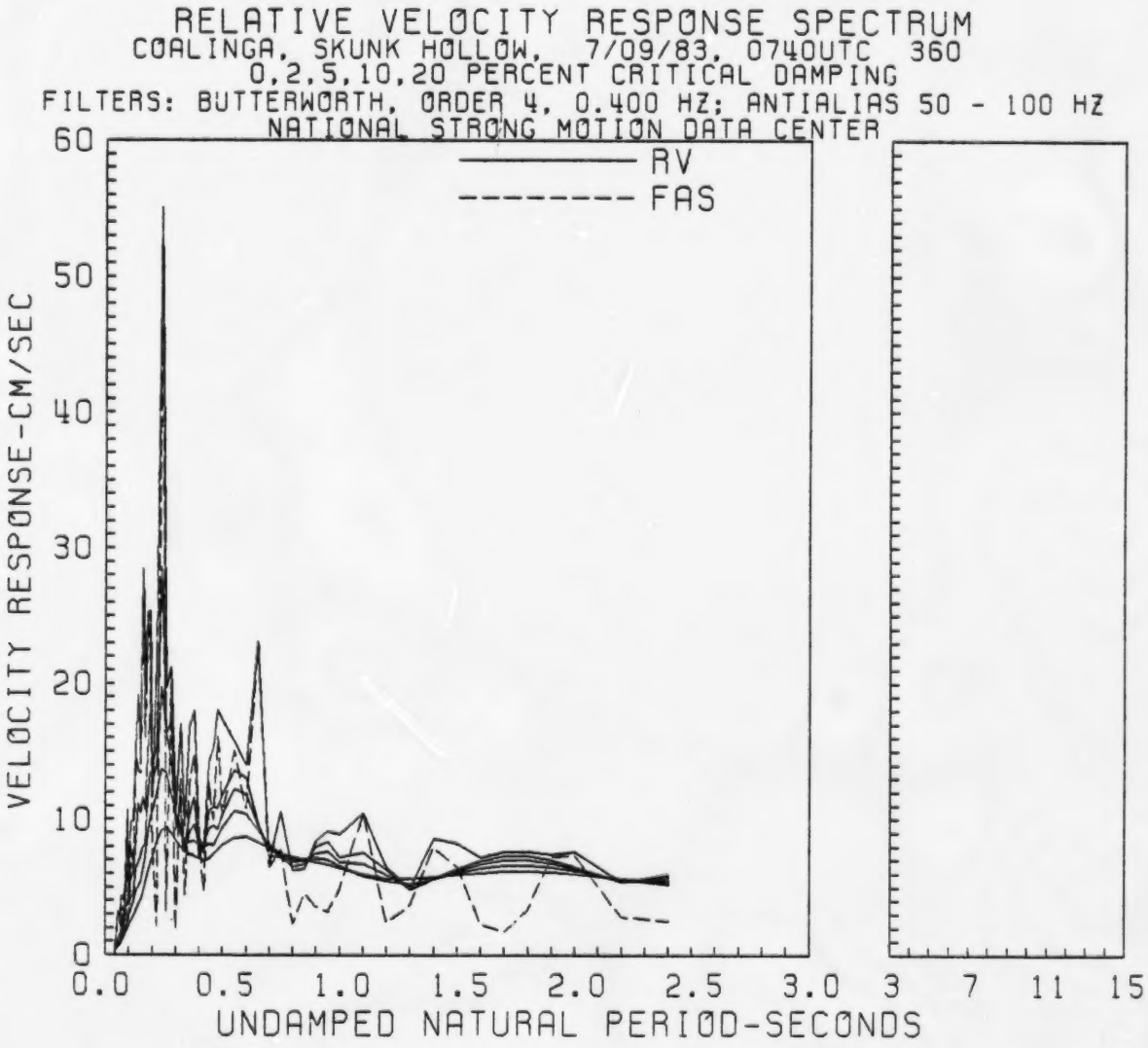

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, OIL FIELDS FIRE STATION (PAD), 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
25
20
15
10
5
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

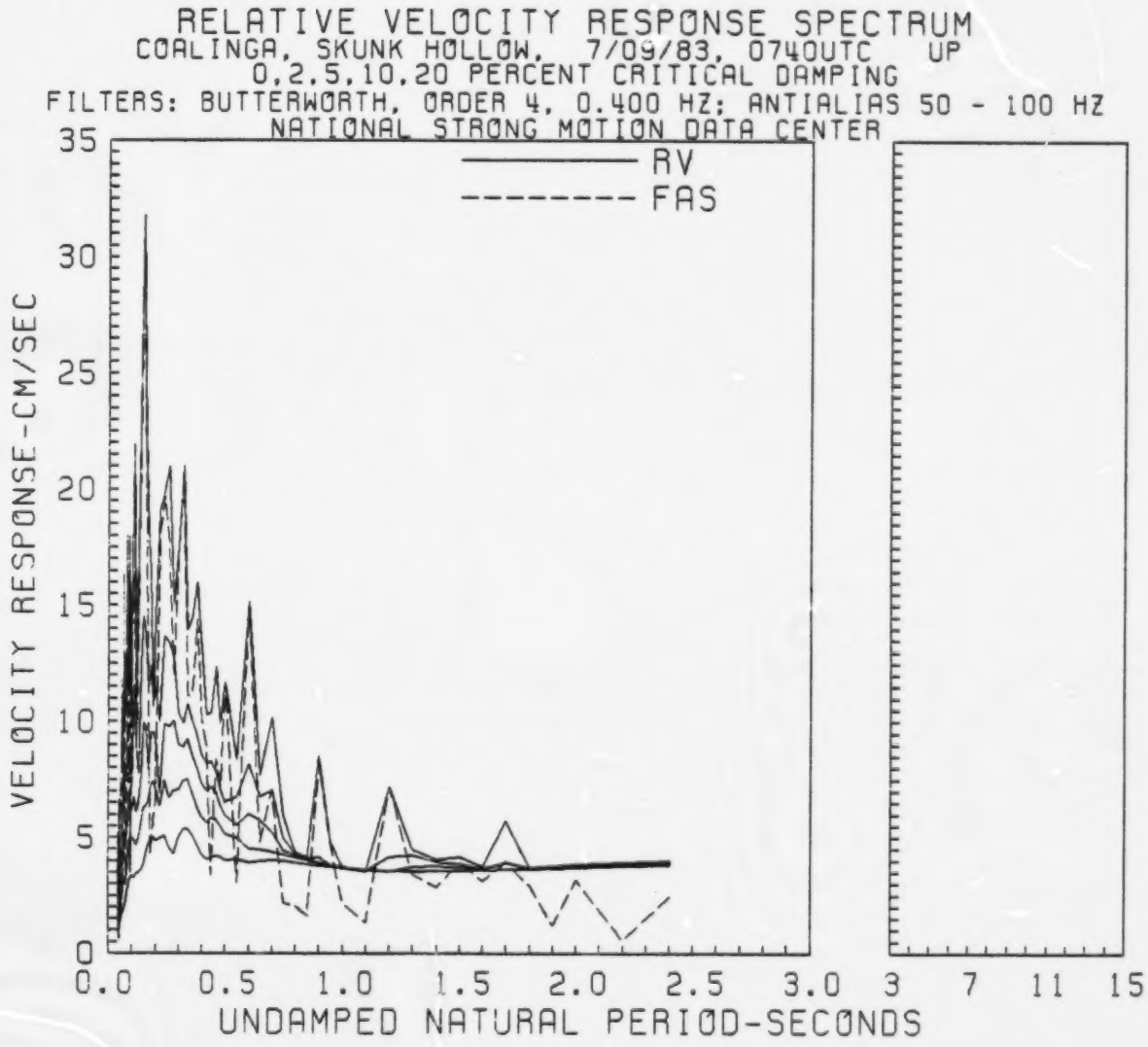

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, OIL FIELDS FIRE STATION (PAD), 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
5
10
15
20
25
30
35
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

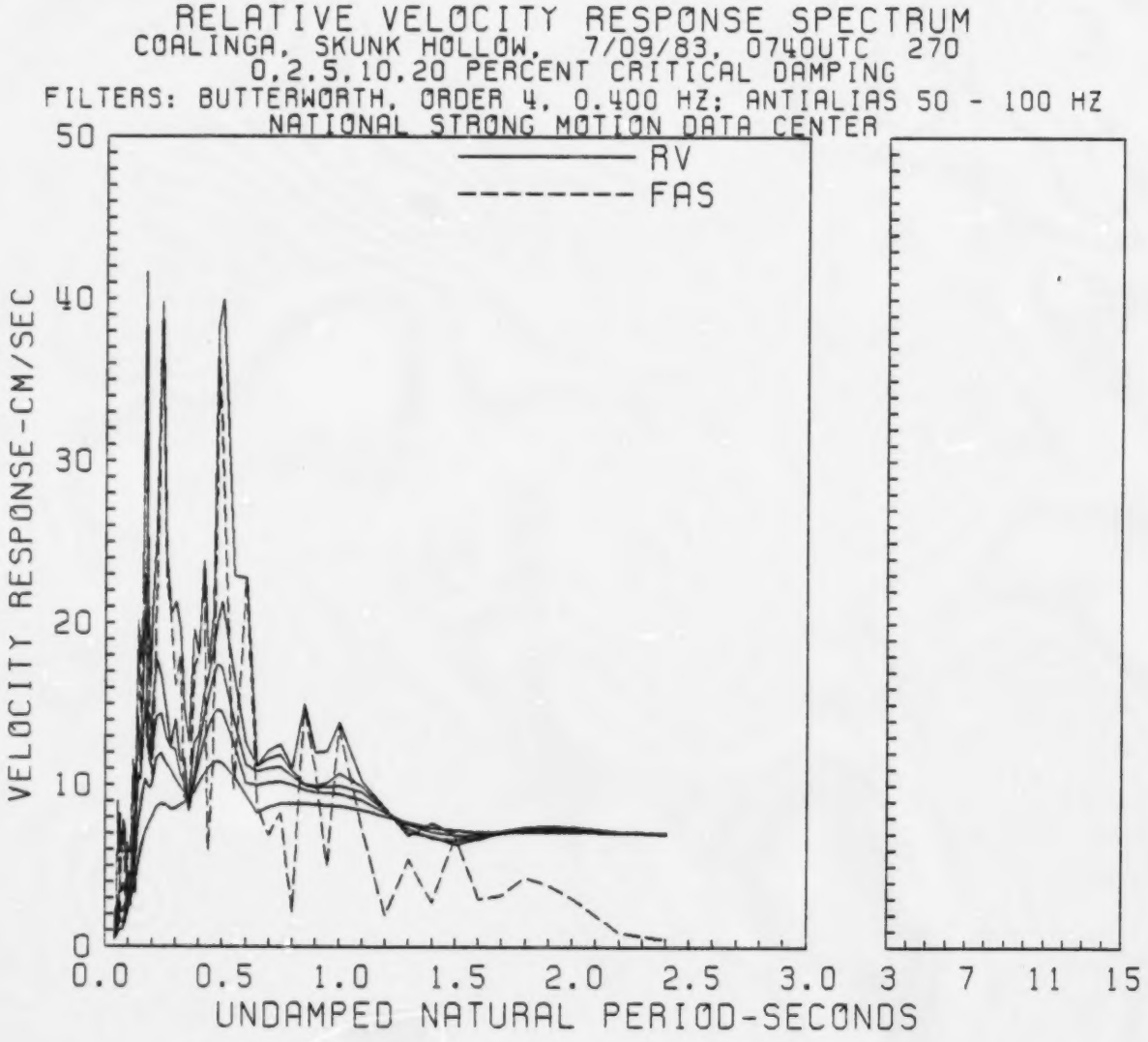

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, PALMER AVENUE, 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
10
20
30
40
50
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

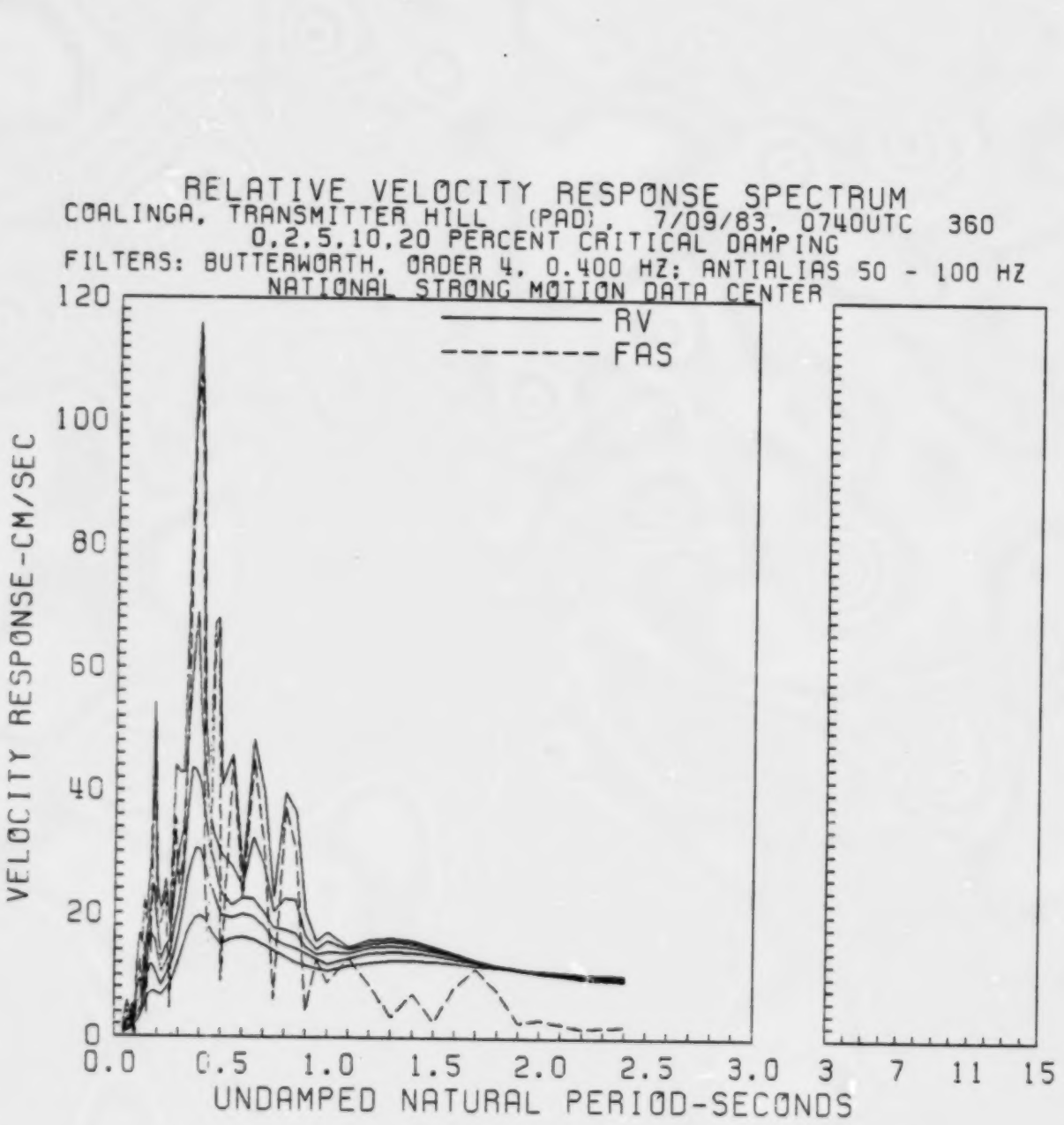

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, PALMER AVENUE, 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
5
10
15
20
25
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

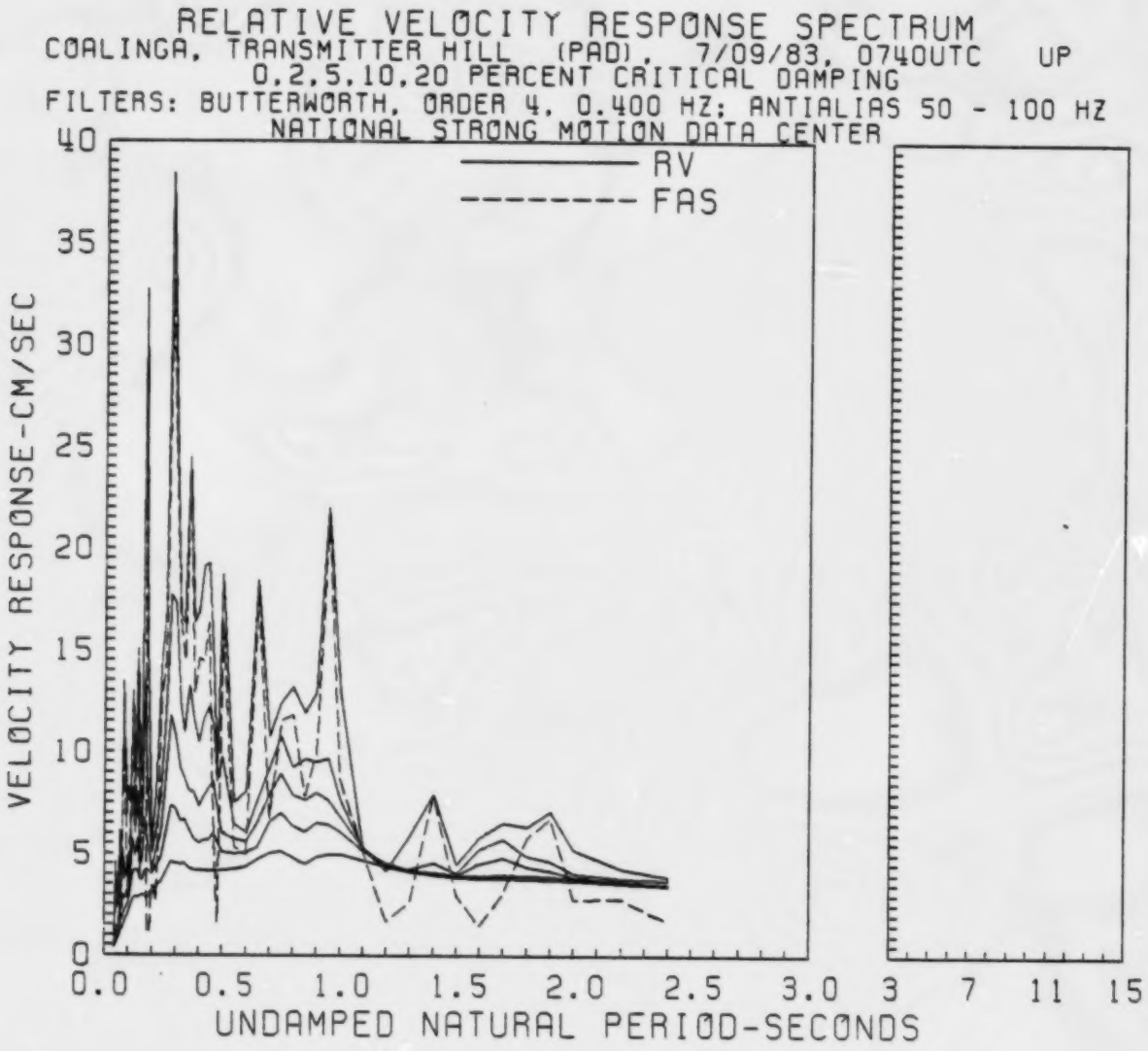

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, PALMER AVENUE, 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
5
10
15
20
25
30
35
40
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

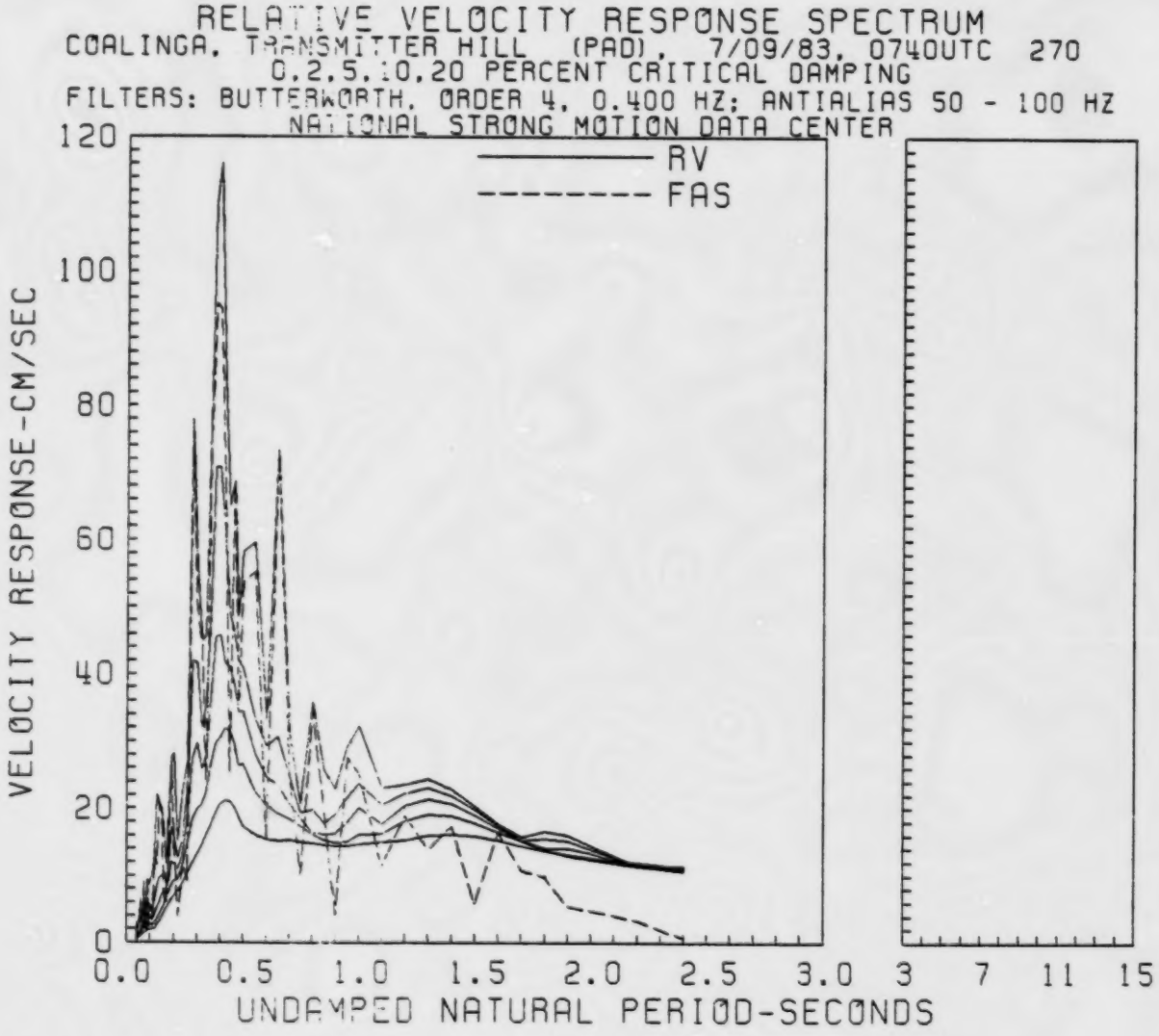

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, SKUNK HOLLOW, 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
0
10
20
30
40
50
60
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15

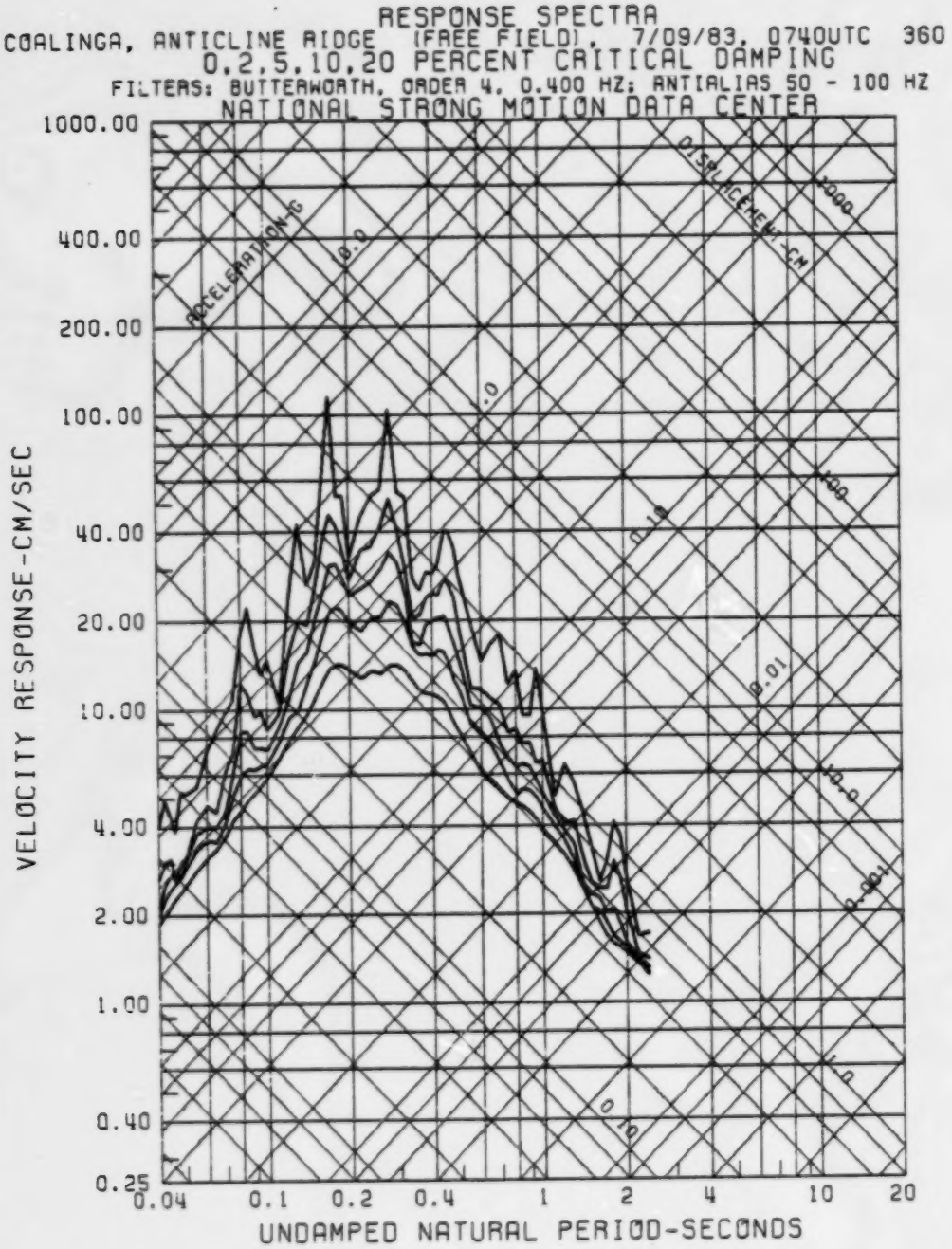

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, SKUNK HOLLOW, 7/09/83, 0740UTC UP
0,2.5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
5
10
15
20
25
30
35
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

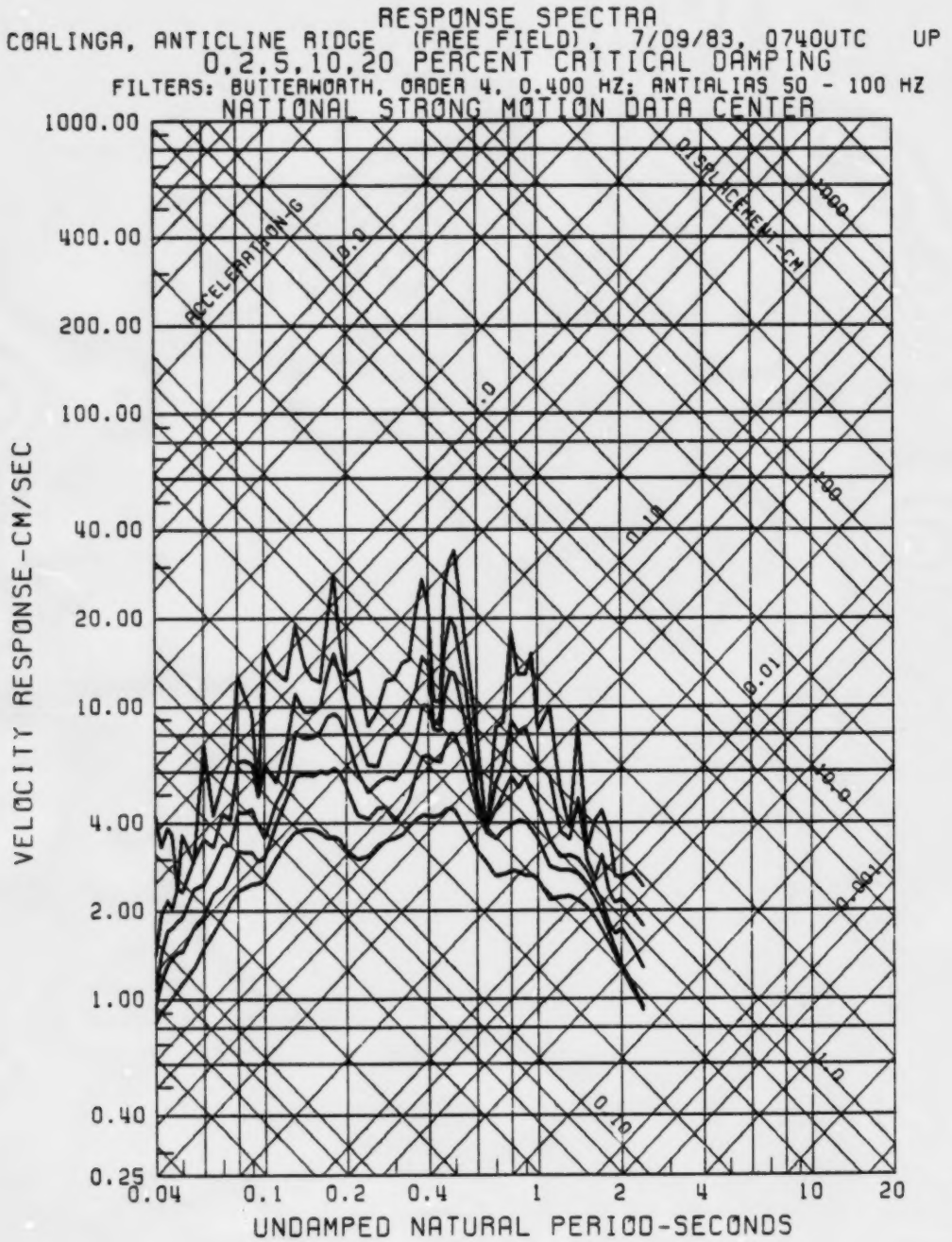

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, SKUNK HOLLOW, 7/09/83, 0740UTC 270
0,2.5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
10
20
30
40
50
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

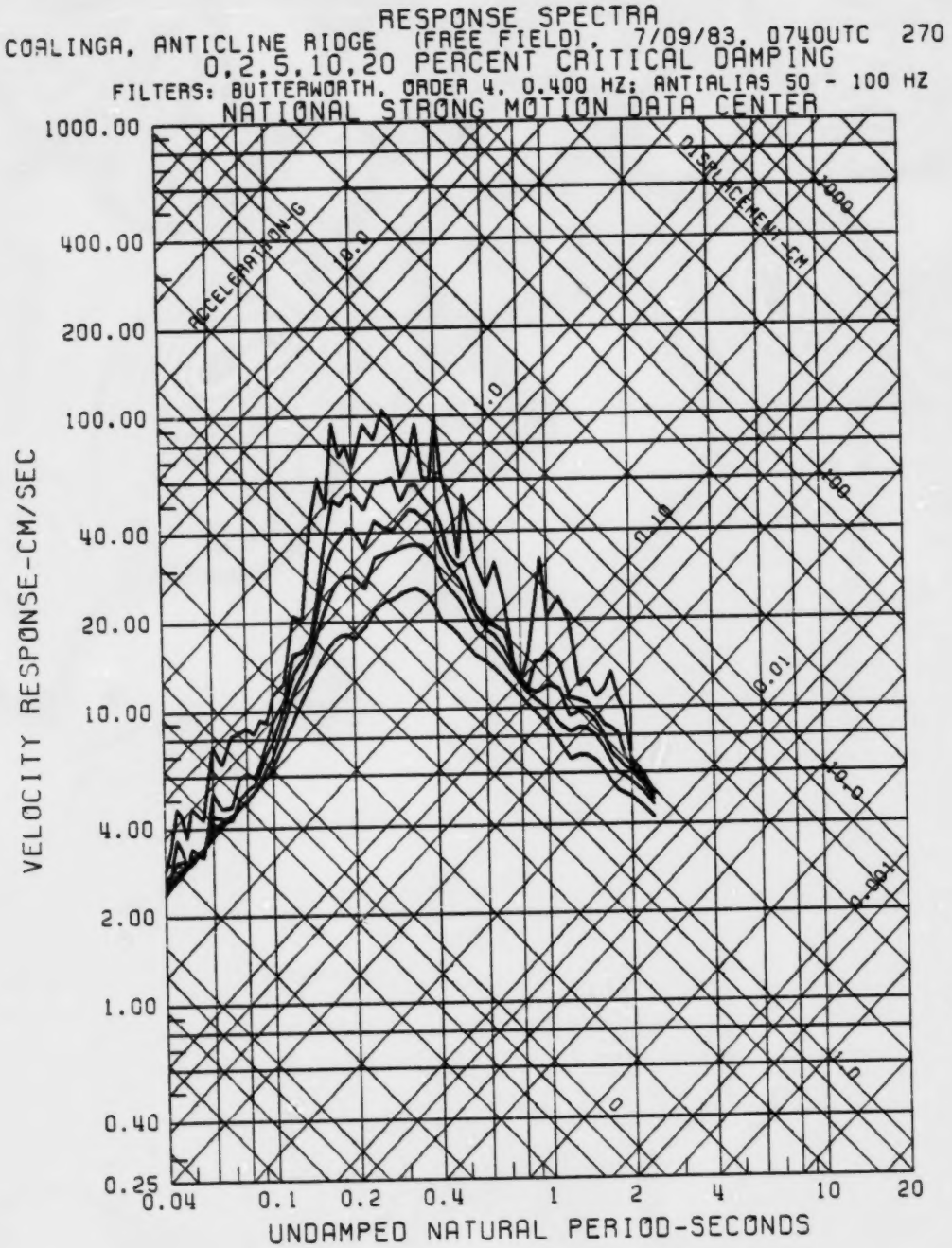

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, TRANSMITTER HILL (PAD), 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
120
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

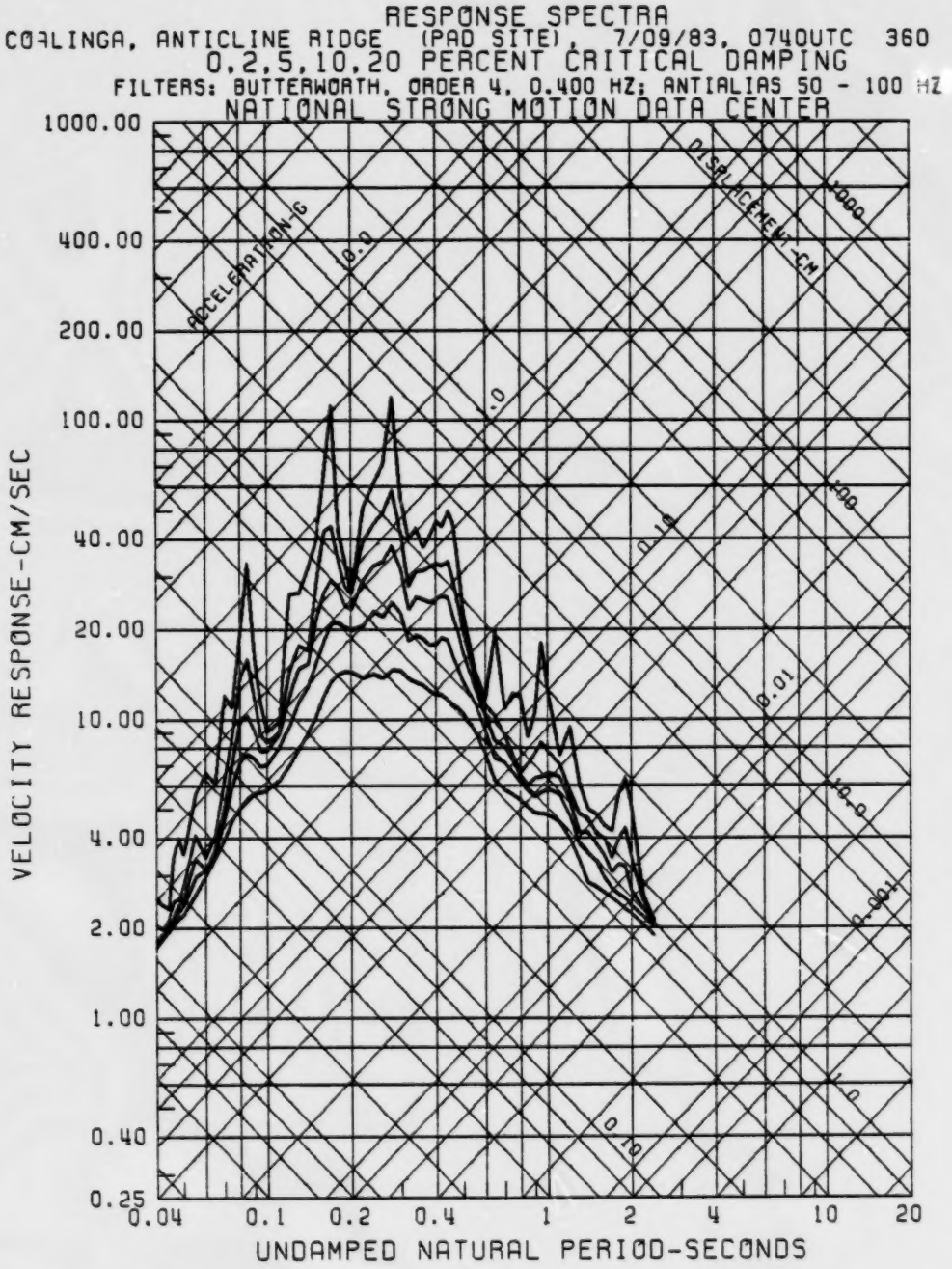

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, TRANSMITTER HILL (PAD), 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
0
5
10
15
20
25
30
35
40
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

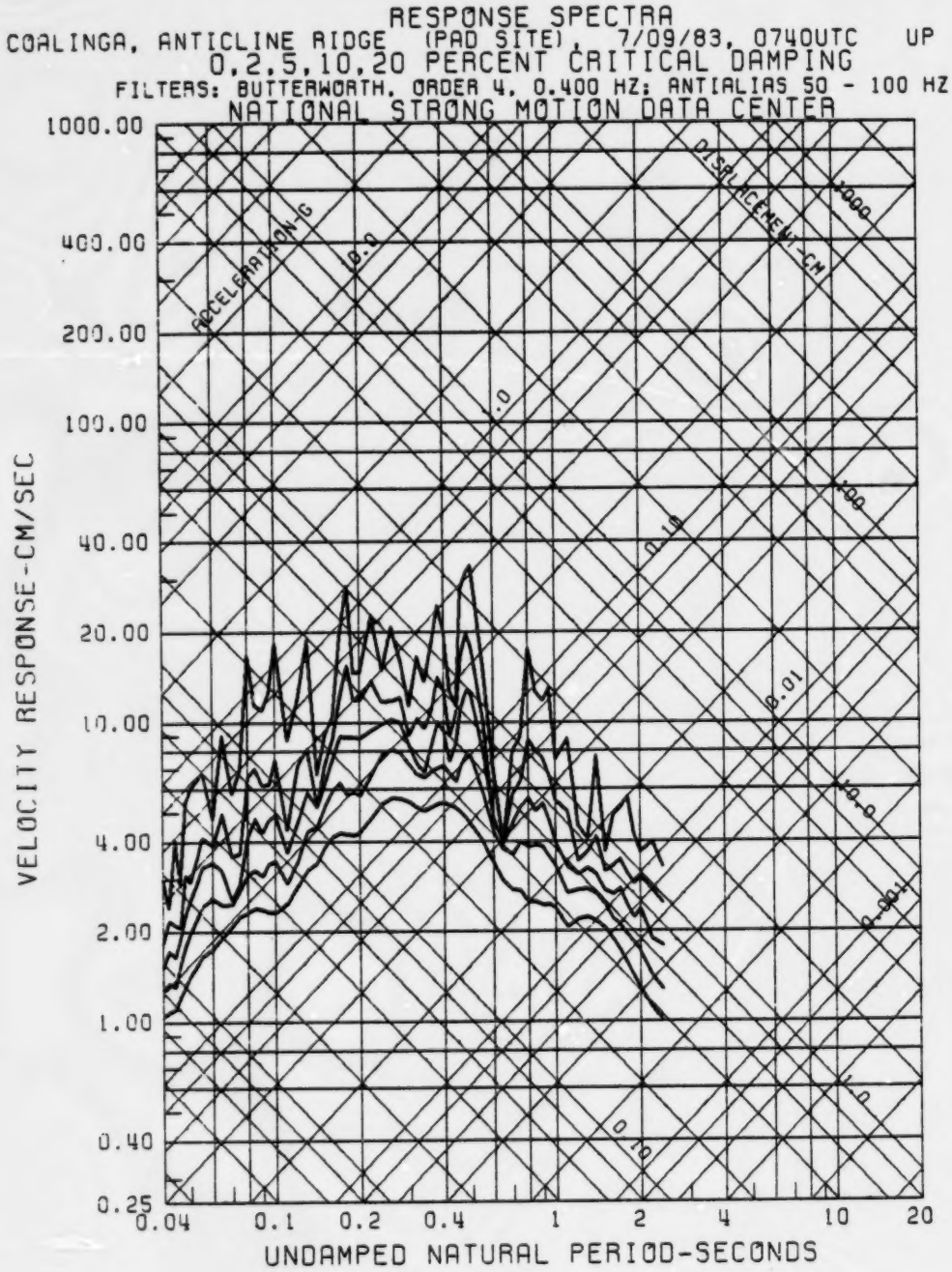

RELATIVE VELOCITY RESPONSE SPECTRUM
COALINGA, TRANSMITTER HILL (PAD), 7/09/83, 0740UTC 270
0.2.5.10.20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
RV
FAS
VELOCITY RESPONSE-CM/SEC
120
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3
7
11
15
UNDAMPED NATURAL PERIOD-SECONDS

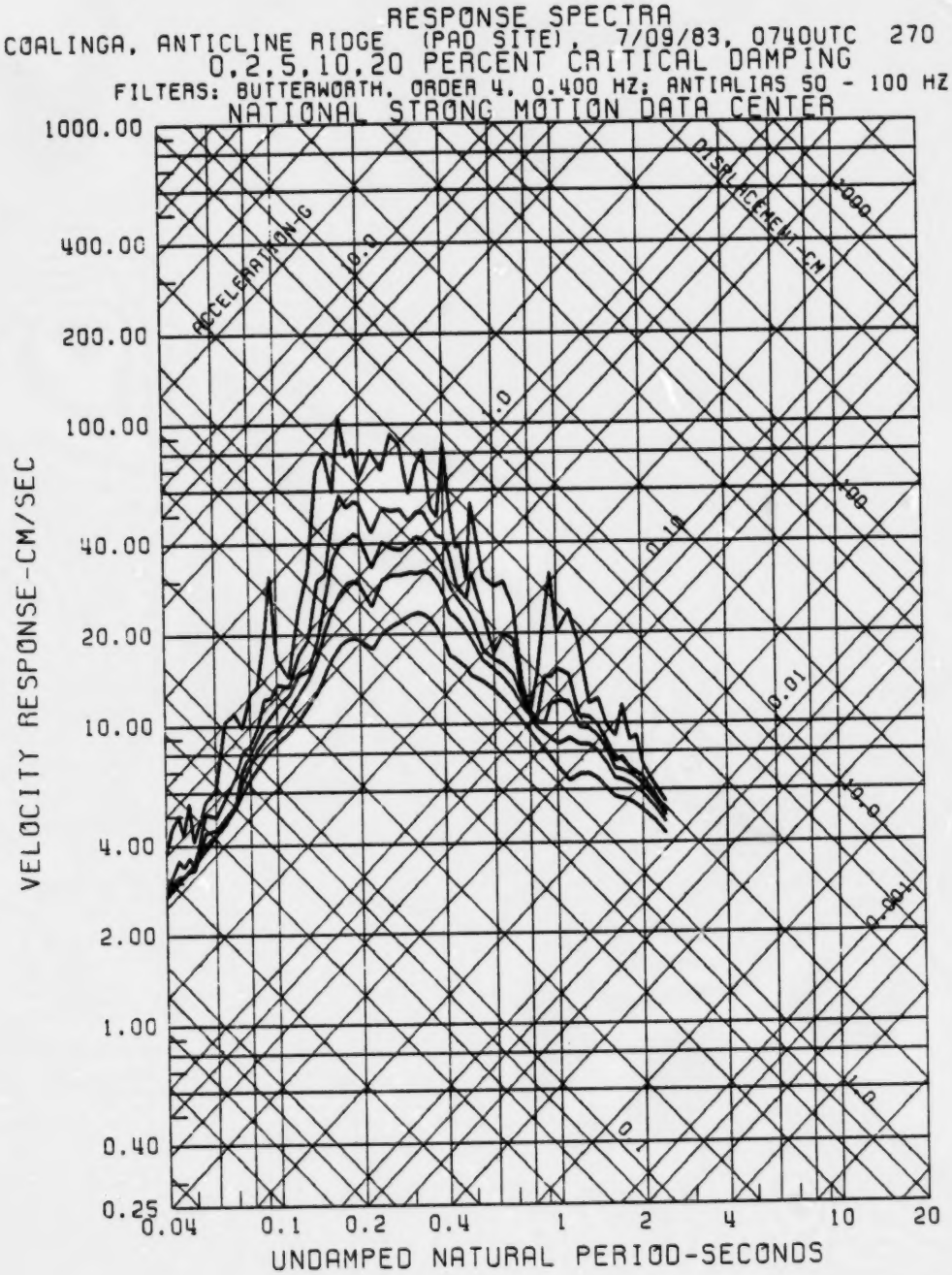

RESPONSE SPECTRA
COALINGA, ANTICLINE RIDGE (FREE FIELD), 7/09/83, 0740UTC 360
0.2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
10.0
1.0
0.10
0.01
DISPLACEMENT-CM
3000
400
40.0
4.0
0.40
0.04
1.0
0.10

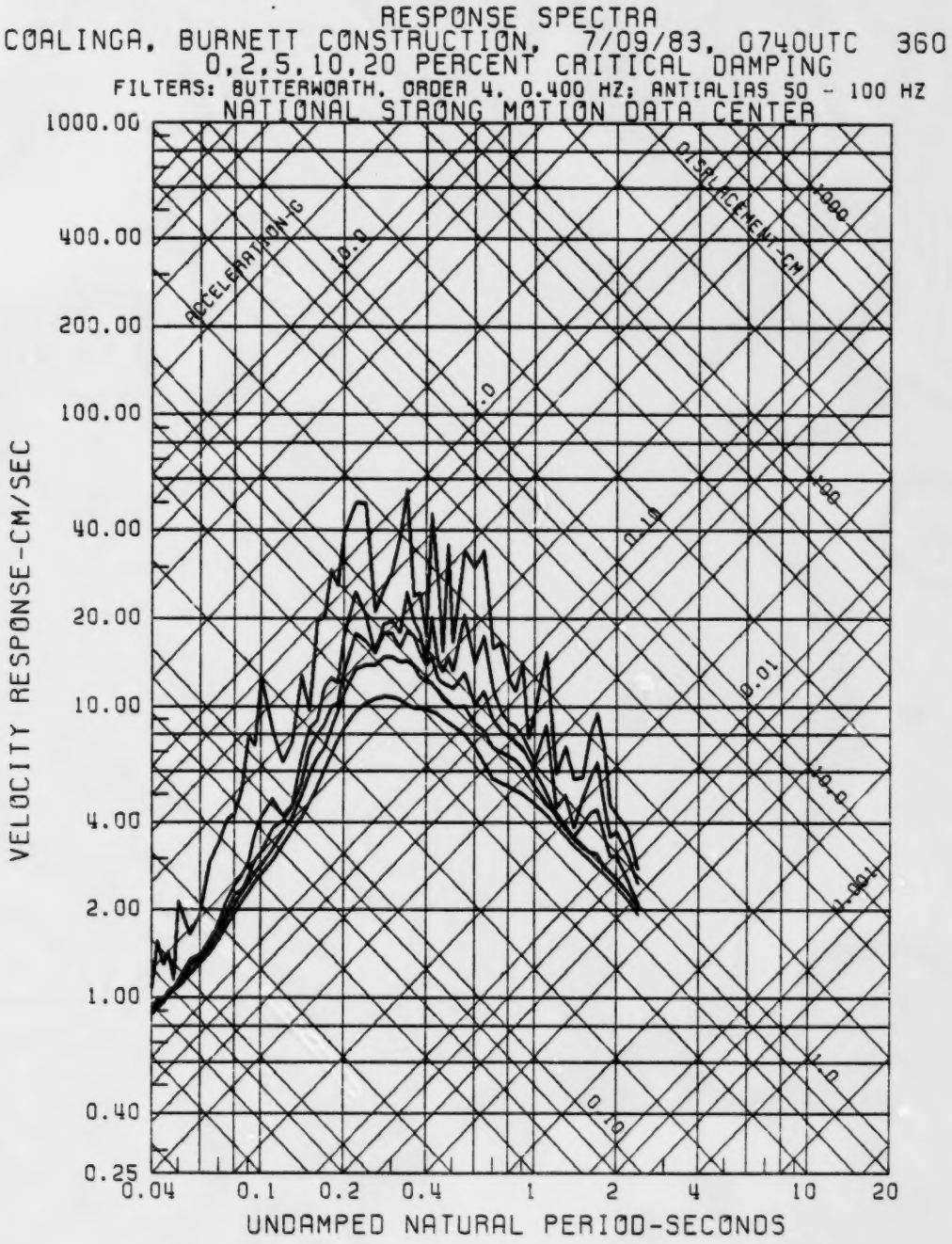

RESPONSE SPECTRA
COALINGA, ANTICLINE RIDGE (FREE FIELD), 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
DISPLACEMENT-CM
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20

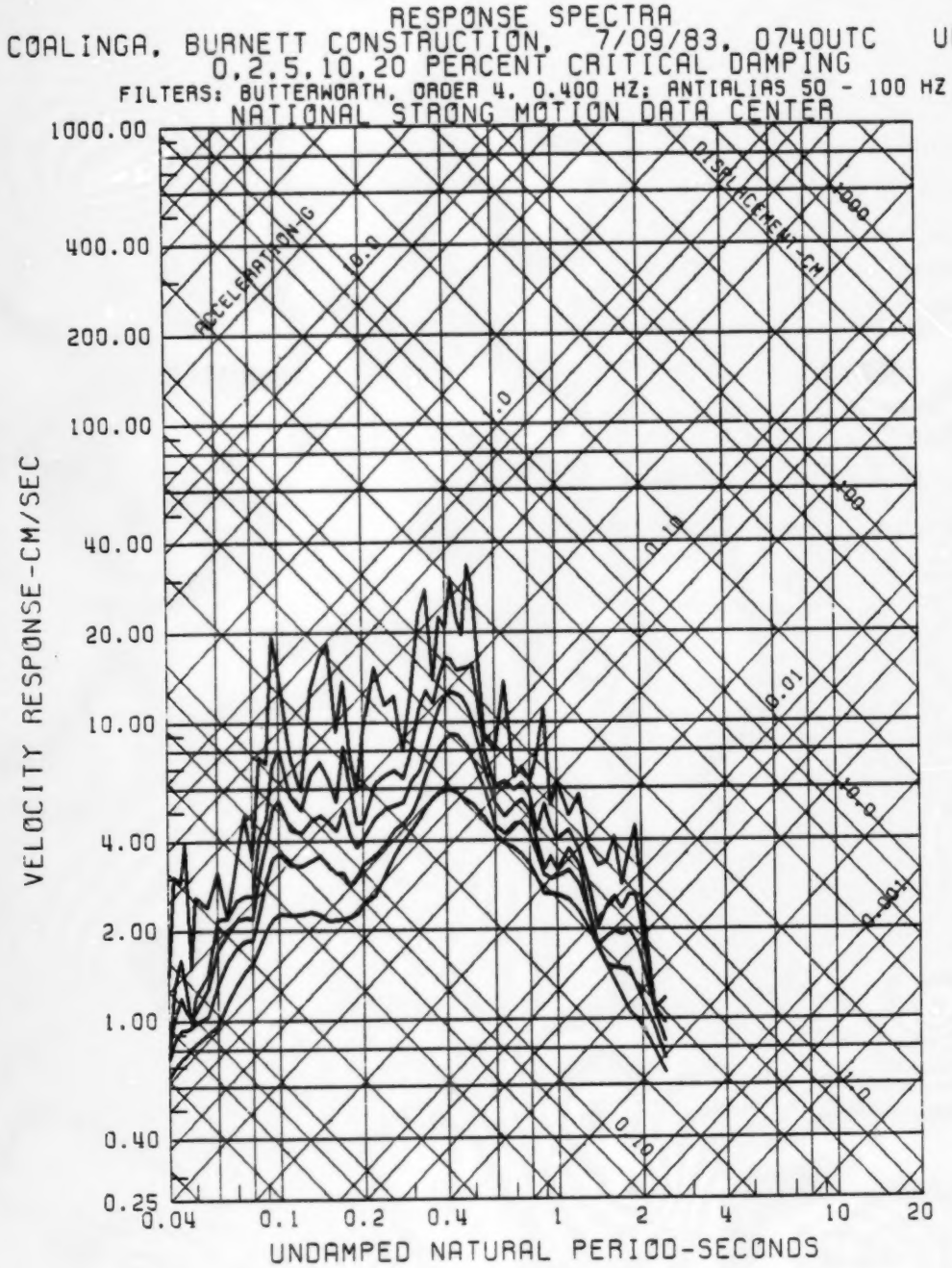

RESPONSE SPECTRA
COALINGA, ANTICLINE RIDGE (FREE FIELD), 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
ACCELERATION-G
DISPLACEMENT-CM

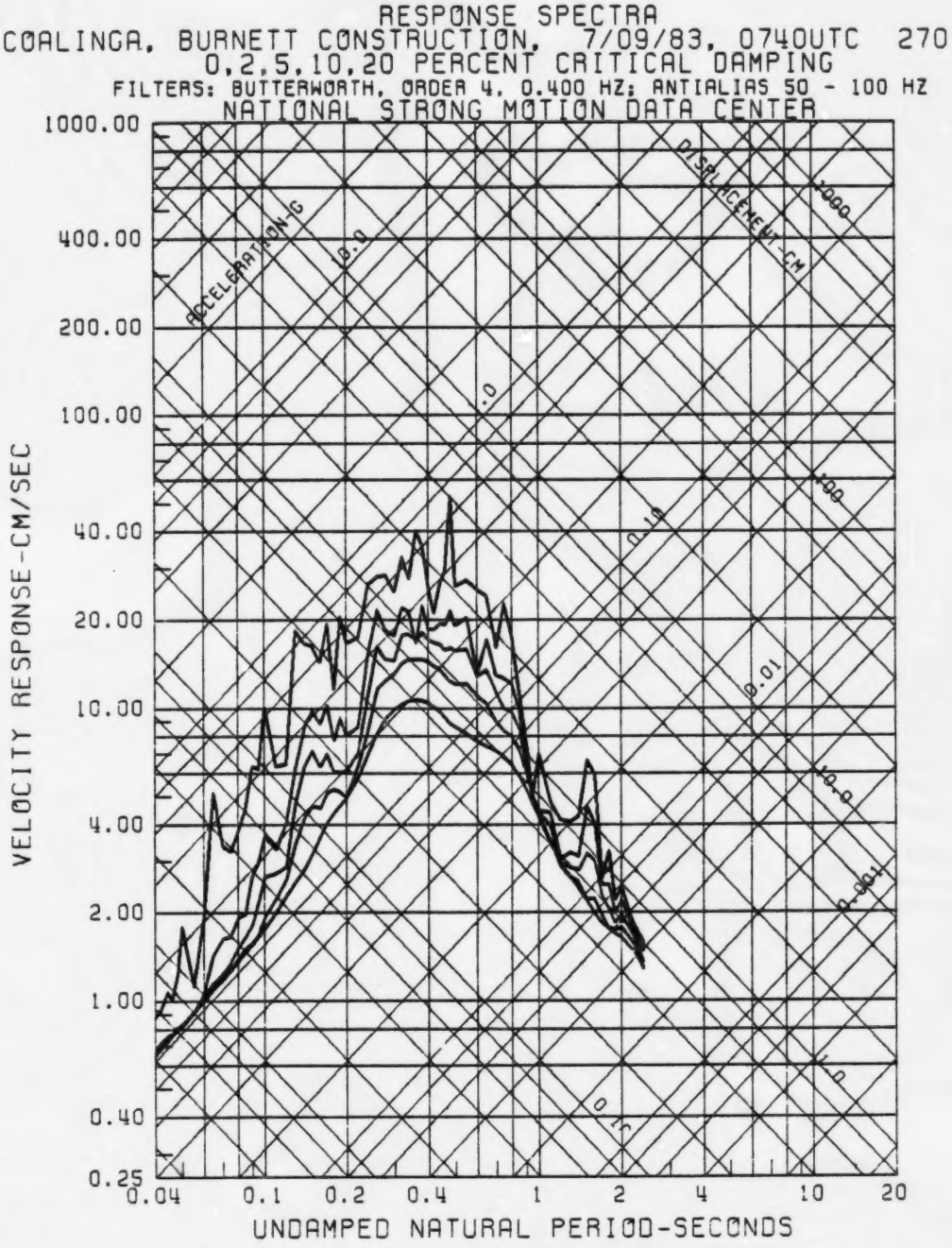

RESPONSE SPECTRA
COALINGA, ANTICLINE RIDGE (PAD SITE), 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
ACCELERATION-G
10.0
1.0
0.1
0.01
DISPLACEMENT-CM
1000
100
10.0
1.0
0.1
0.01
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS

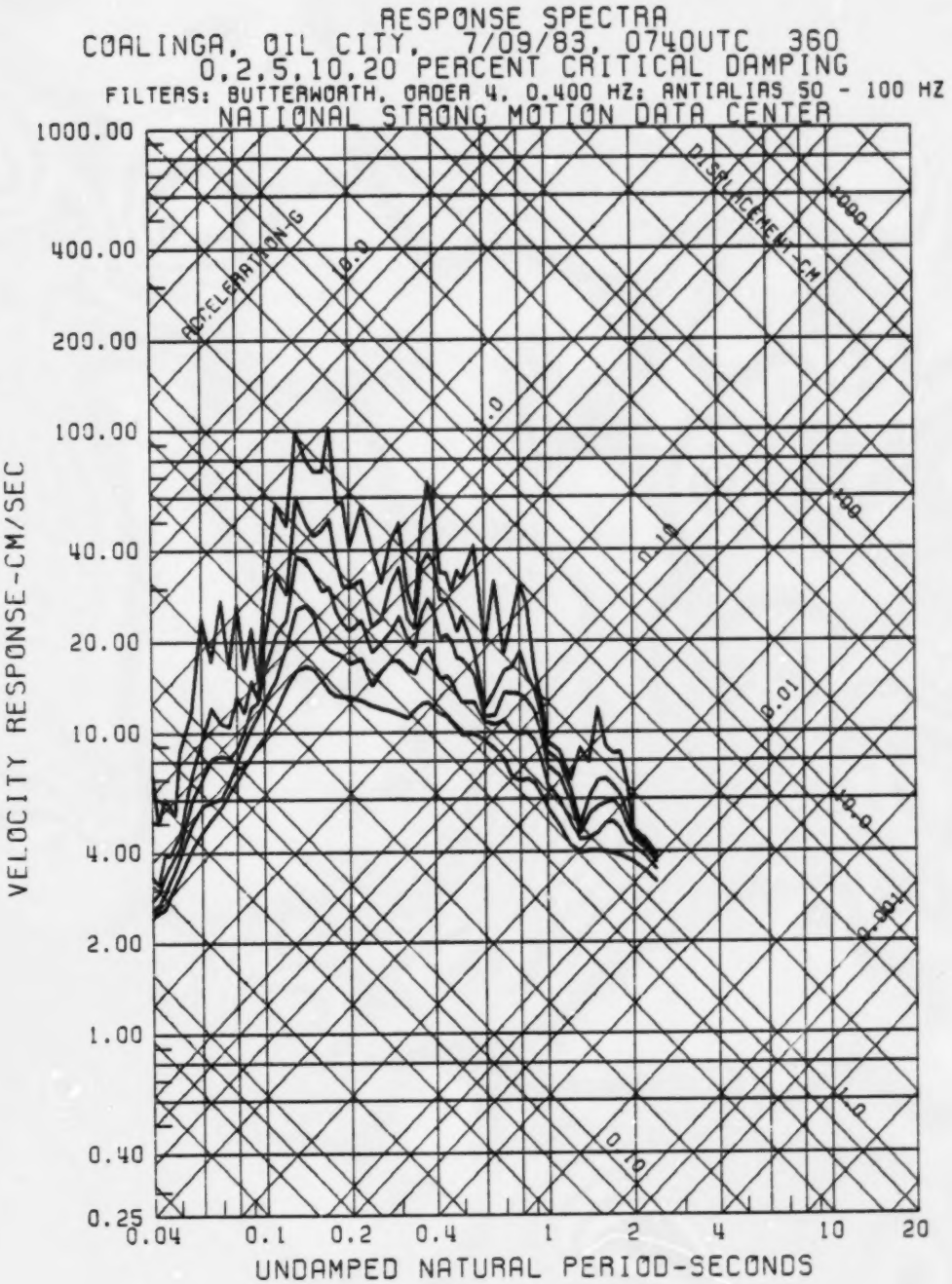

RESPONSE SPECTRA
COALINGA, ANTICLINE RIDGE (PAD SITE), 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
10.0
1.0
0.1
0.01
DISPLACEMENT-CM
1000
100
10.0
1.0
0.10

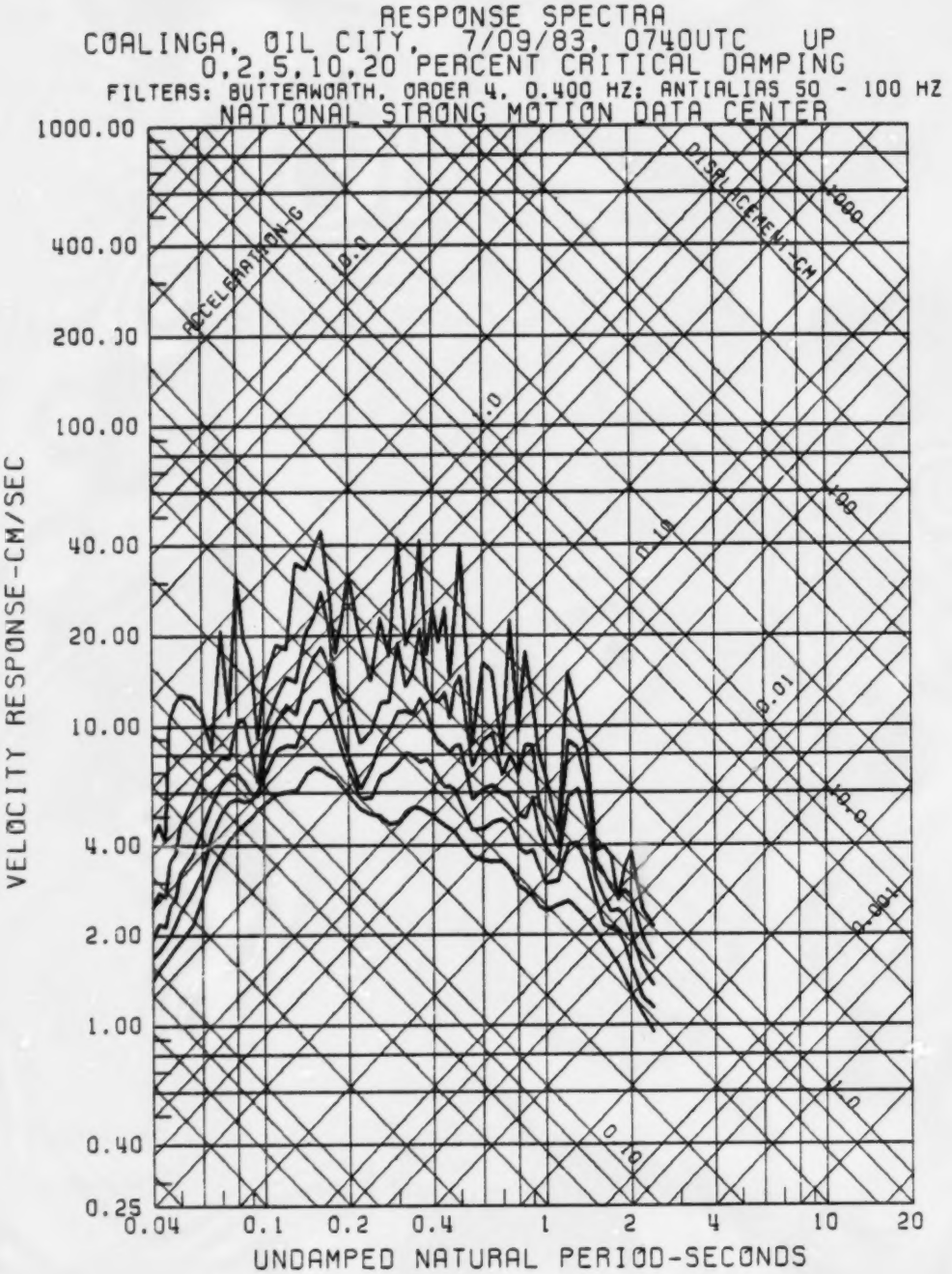

RESPONSE SPECTRA
COALINGA, ANTICLINE RIDGE (PAD SITE), 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
DISPLACEMENT-CM
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20


RESPONSE SPECTRA
COALINGA, BURNETT CONSTRUCTION, 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
ACCELERATION-G
DISPLACEMENT-CM
1000
100
10.0
1.0
0.1
0.01
0.10
0.001


RESPONSE SPECTRA
COALINGA, BURNETT CONSTRUCTION, 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
10.0
1.0
0.1
0.01
DISPLACEMENT-CM
1000
100
10.0
1.0
0.10


RESPONSE SPECTRA
COALINGA, BURNETT CONSTRUCTION, 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
10.0
1.0
0.1
0.01
DISPLACEMENT-CM
1000
100
10.0
1.0
0.01


RESPONSE SPECTRA
COALINGA, OIL CITY, 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
10.0
1.0
0.1
0.01
DISPLACEMENT-CM
3000
100
10.0
1.0
0.10


RESPONSE SPECTRA
COALINGA, OIL CITY, 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
ACCELERATION-G
10.0
1.0
0.10
0.01
DISPLACEMENT-CM
1000
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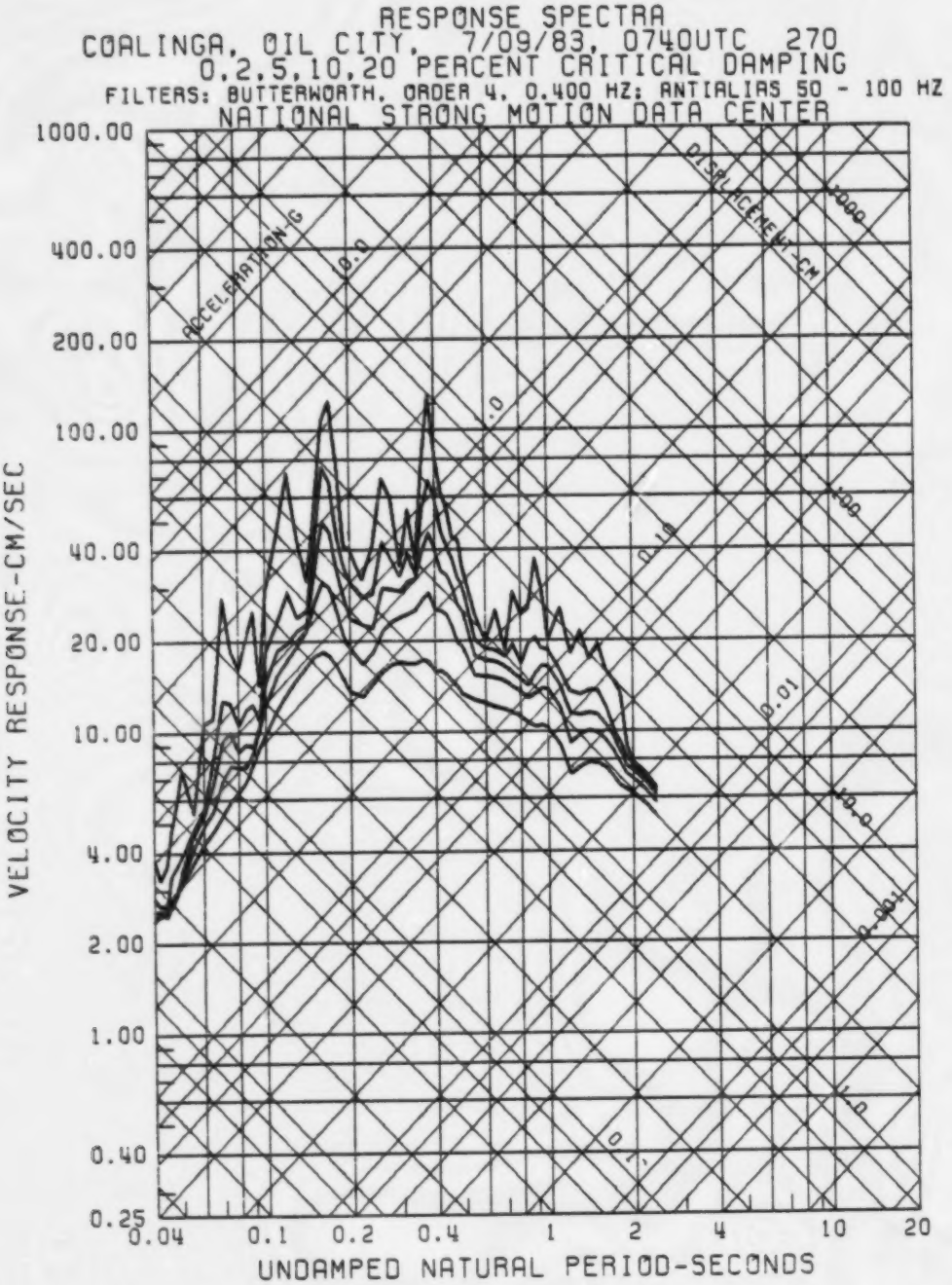
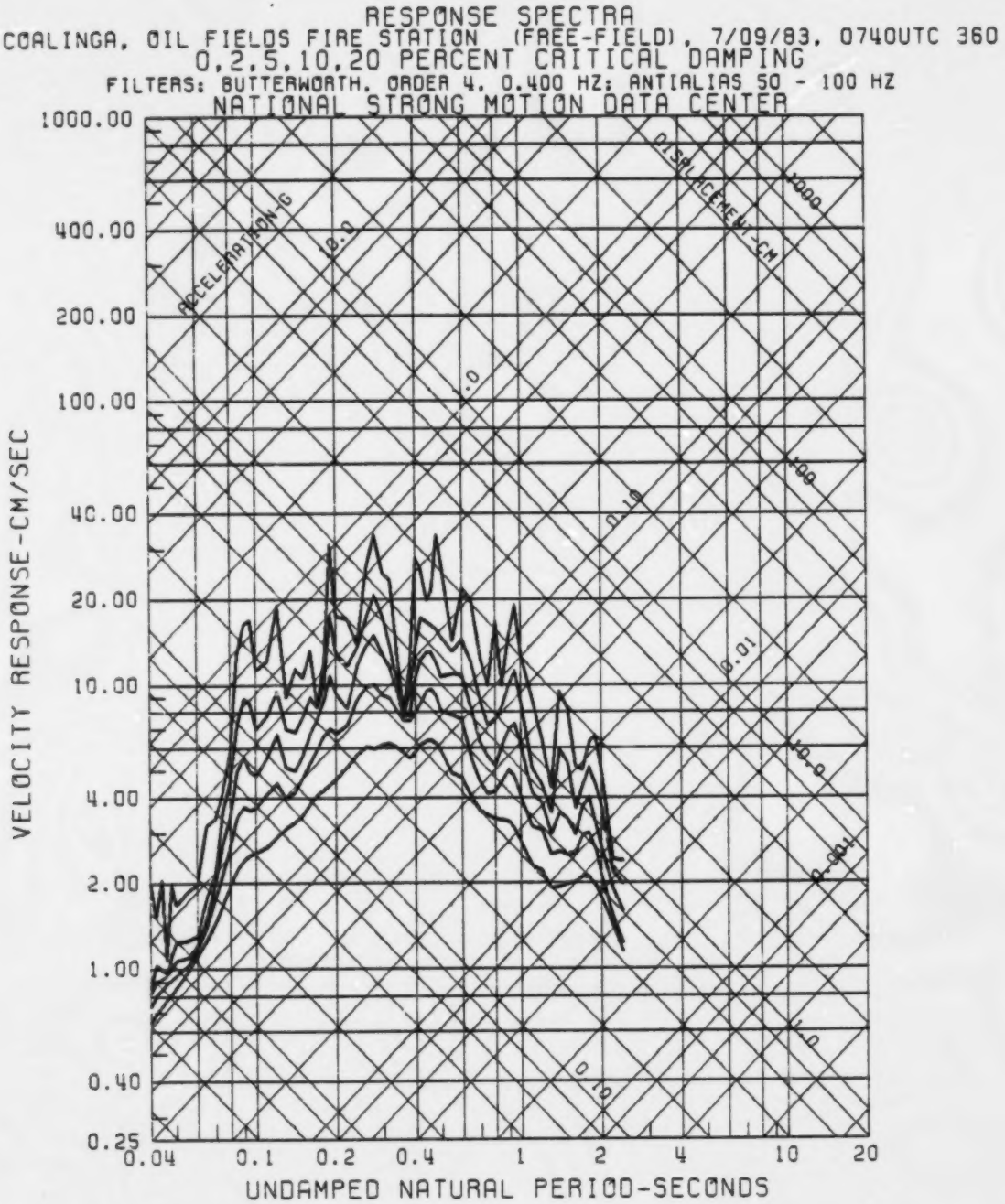
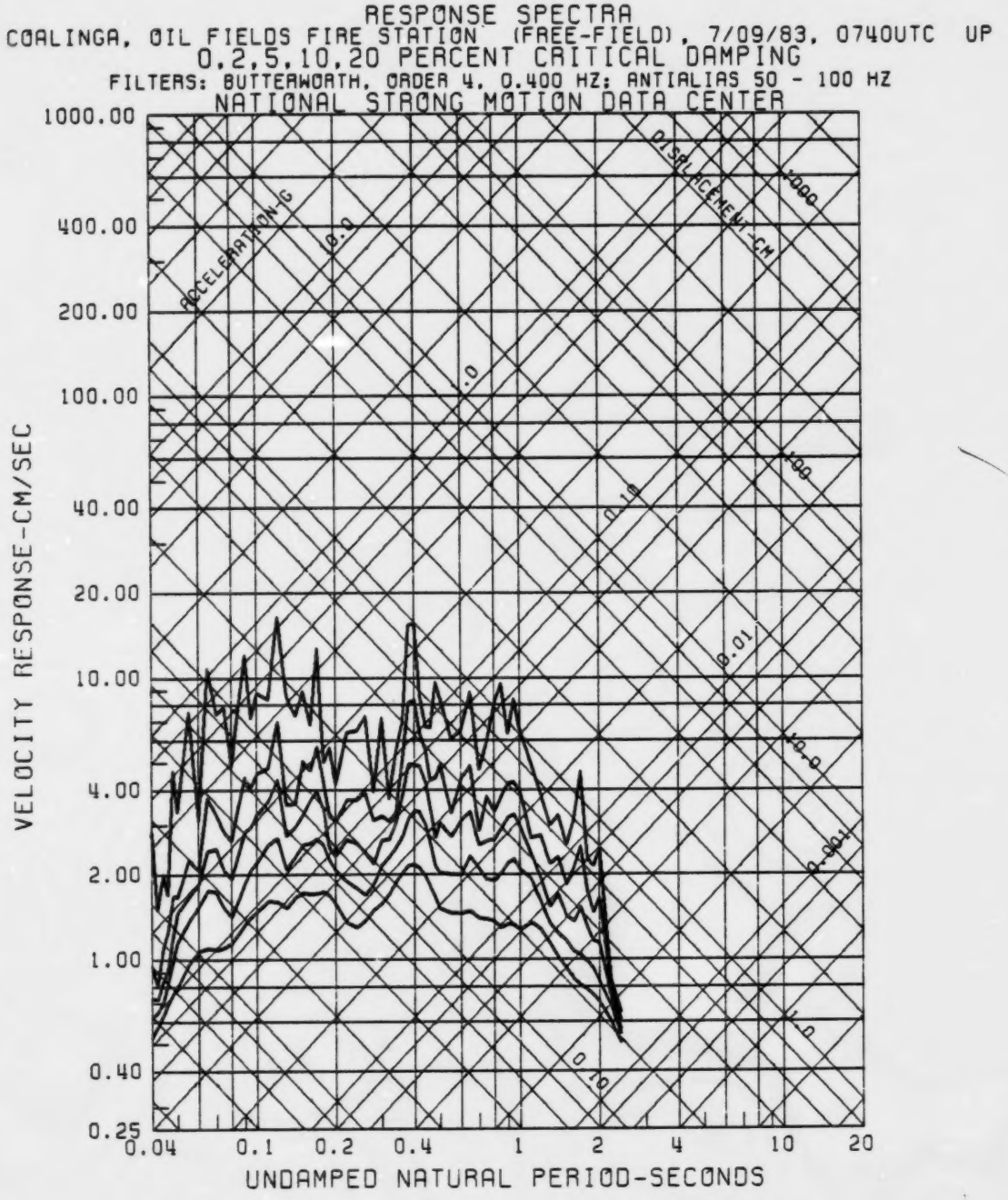
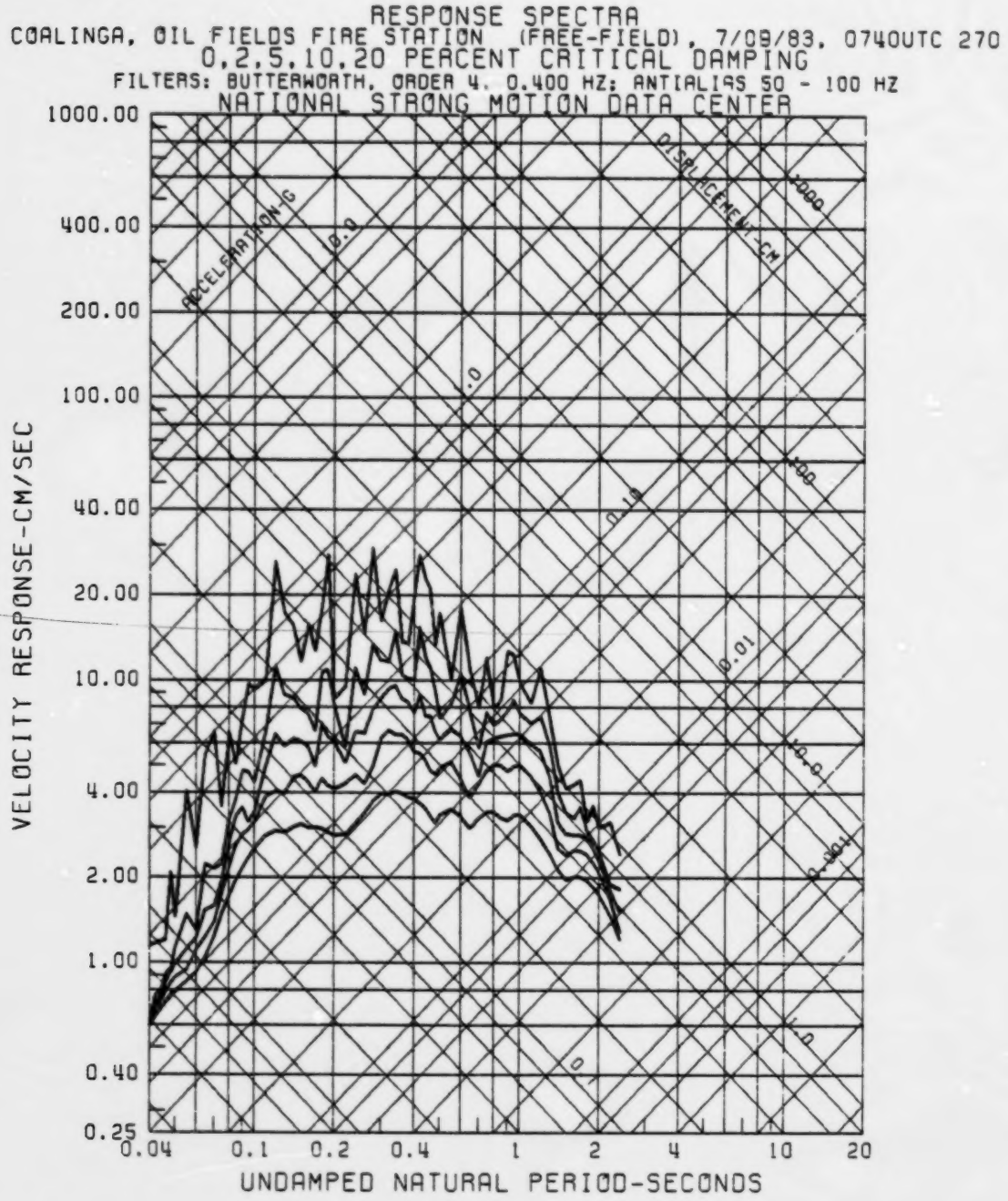
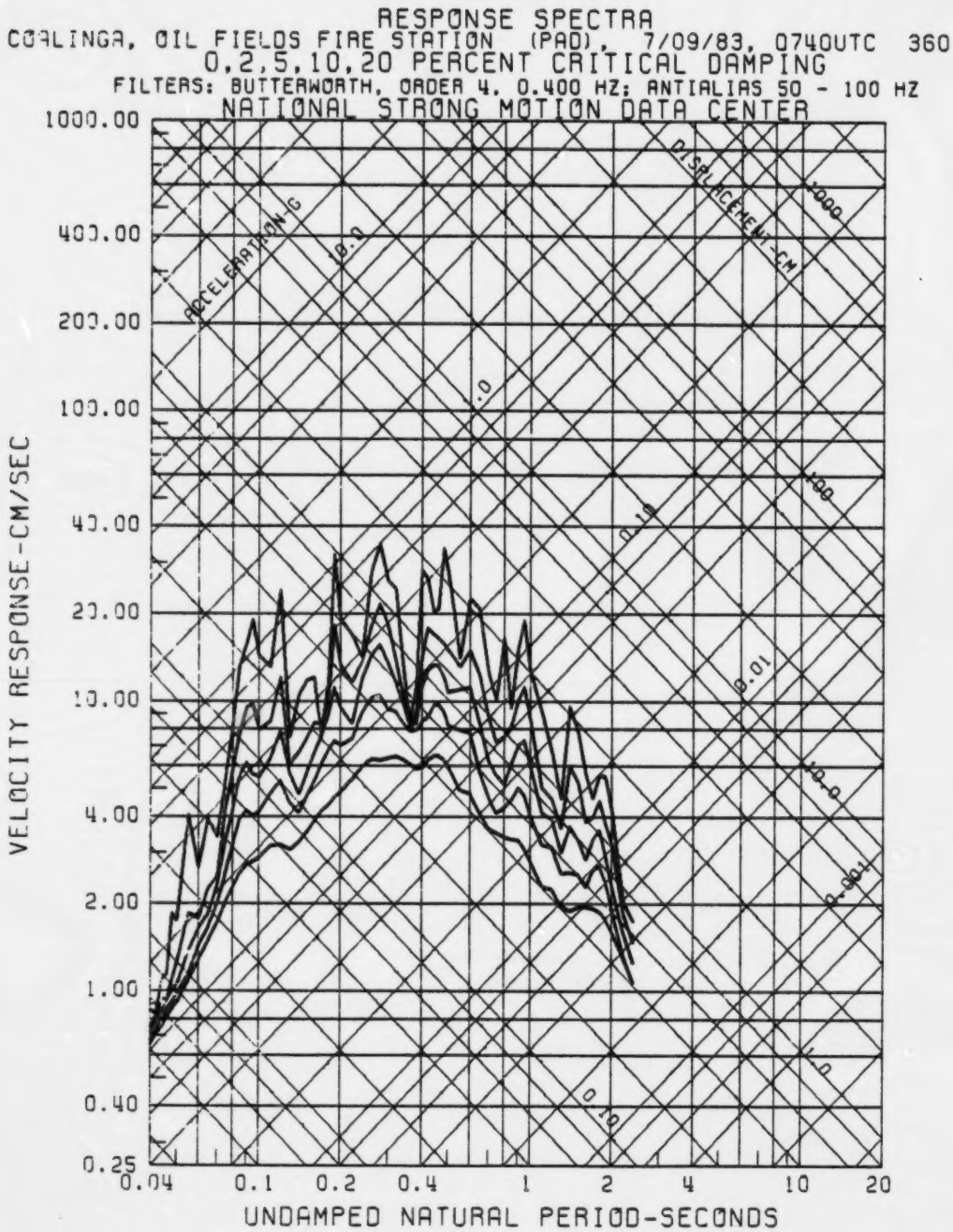
1.0
0.001

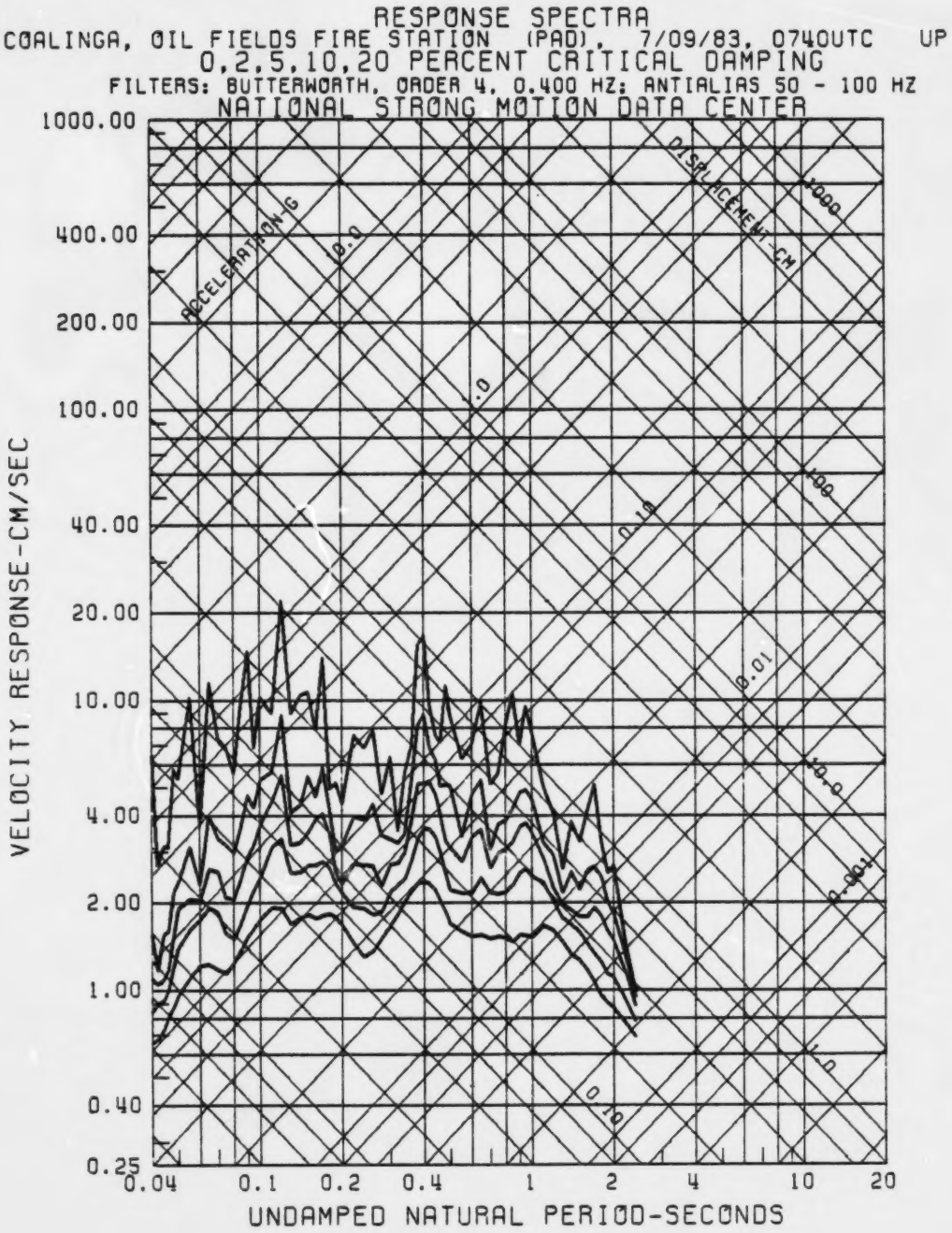

RESPONSE SPECTRA
COALINGA, OIL CITY, 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
DISPLACEMENT-CM
10.0
1.0
0.1
0.01
1000
100
10.0
1.0
0.1
0.01


RESPONSE SPECTRA
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD), 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
DISPLACEMENT-CM
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20


RESPONSE SPECTRA
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD), 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
DISPLACEMENT-CM


RESPONSE SPECTRA
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD), 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
DISPLACEMENT-CM


RESPONSE SPECTRA
CORLINGA, OIL FIELDS FIRE STATION (PAD), 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
10.0
1.0
0.10
0.01
DISPLACEMENT-CM
1000
100
10.0
1.0
0.10


RESPONSE SPECTRA
COALINGA, OIL FIELDS FIRE STATION (PAD), 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
ACCELERATION-G
DISPLACEMENT-CM
10.0
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.0
100
0.10
0.01
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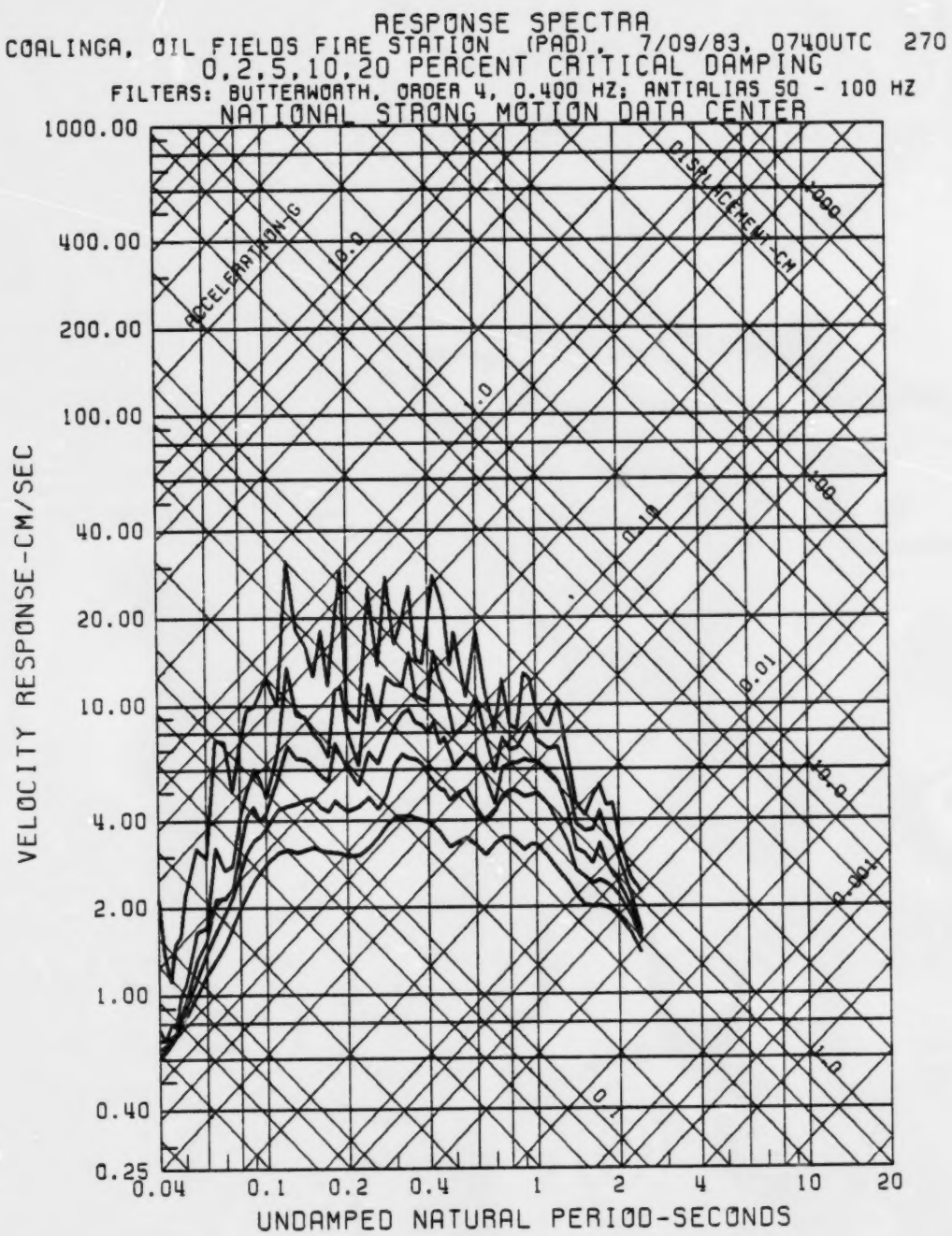
1.0
0.10


RESPONSE SPECTRA
COALINGA, OIL FIELDS FIRE STATION (PAD), 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
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100.00
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2.00
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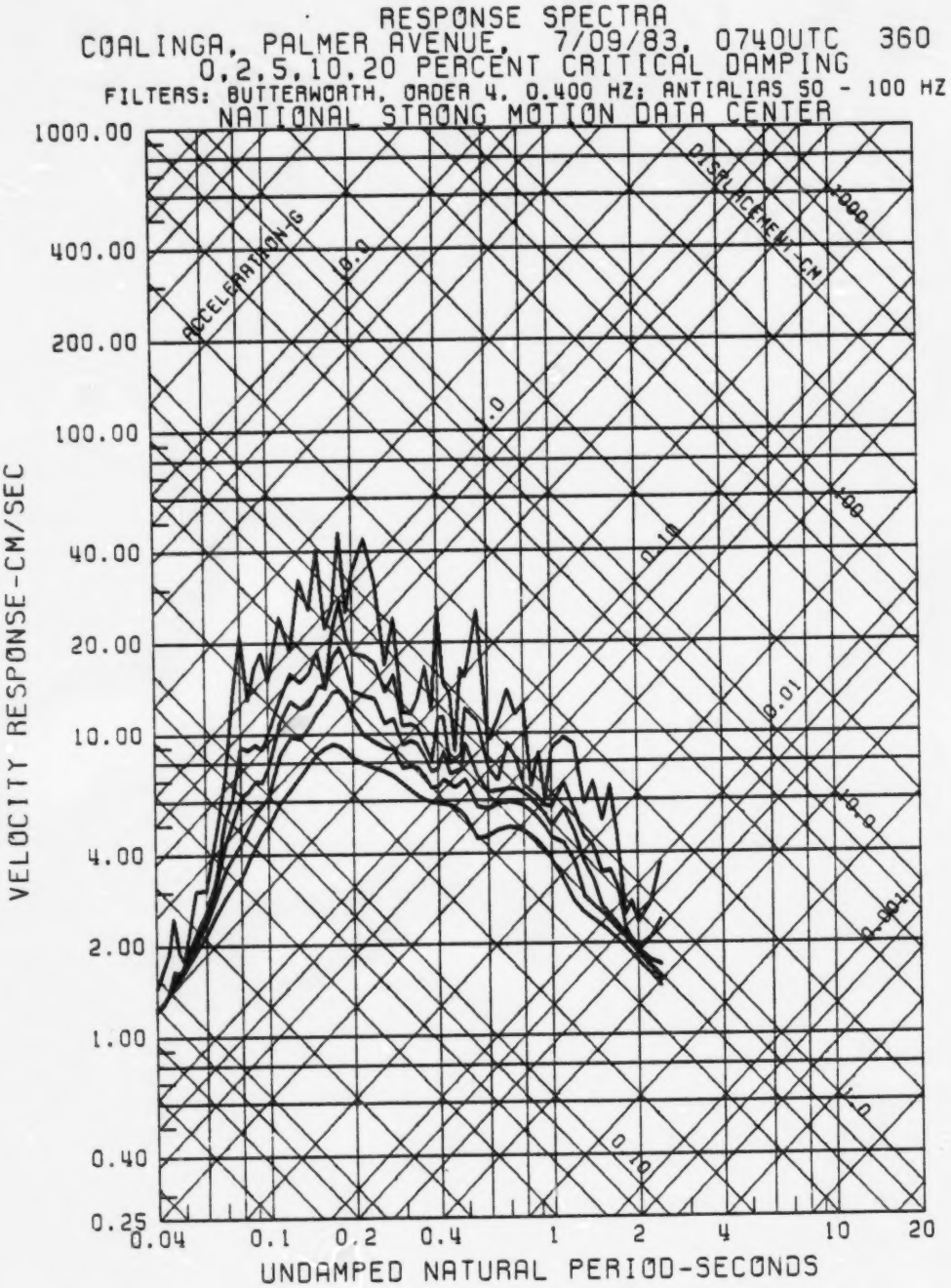
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
DISPLACEMENT-CM
10.0
1.0
0.1
0.01
1000
100
10.0
1.0
0.1
0.01


RESPONSE SPECTRA
COALINGA, PALMER AVENUE, 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
DISPLACEMENT-CM
1000.00
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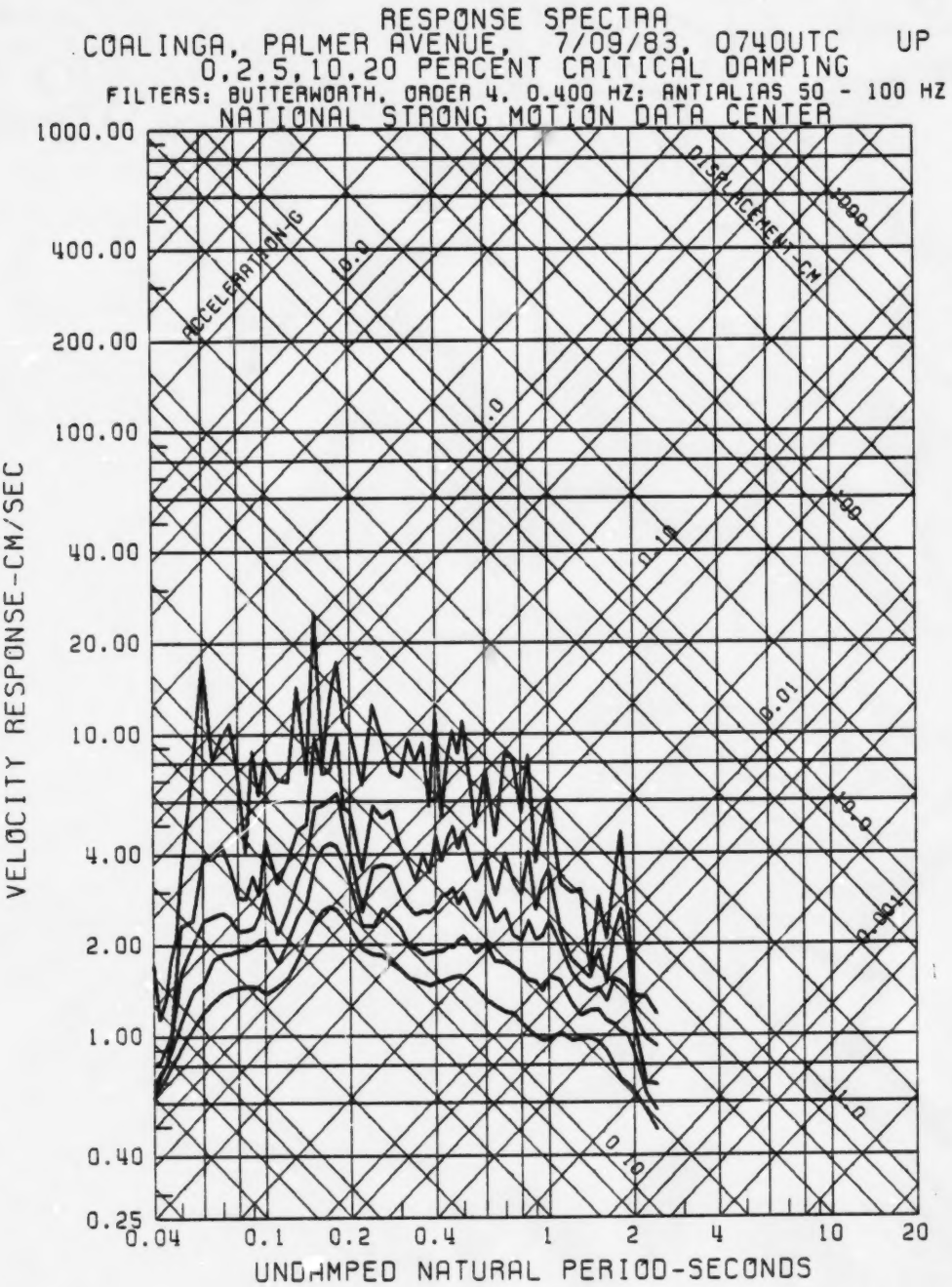
RESPONSE SPECTRA
COALINGA, PALMER AVENUE, 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
DISPLACEMENT-CM
1000.00
400.00
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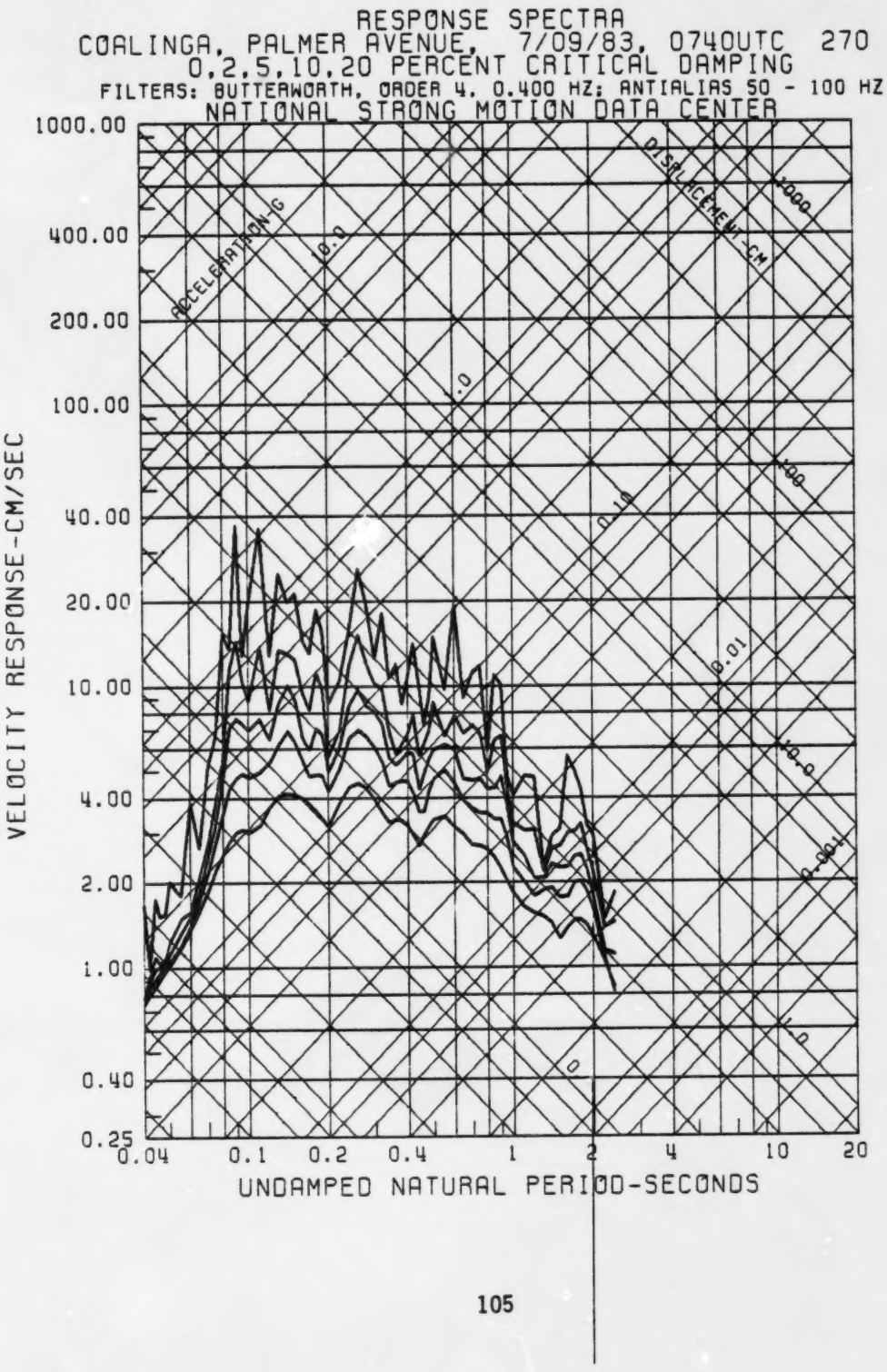
RESPONSE SPECTRA
COALINGA, PALMER AVENUE, 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
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2.00
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0.40
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10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
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1.0
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DISPLACEMENT-CM
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100
10.0
1.0
0.1
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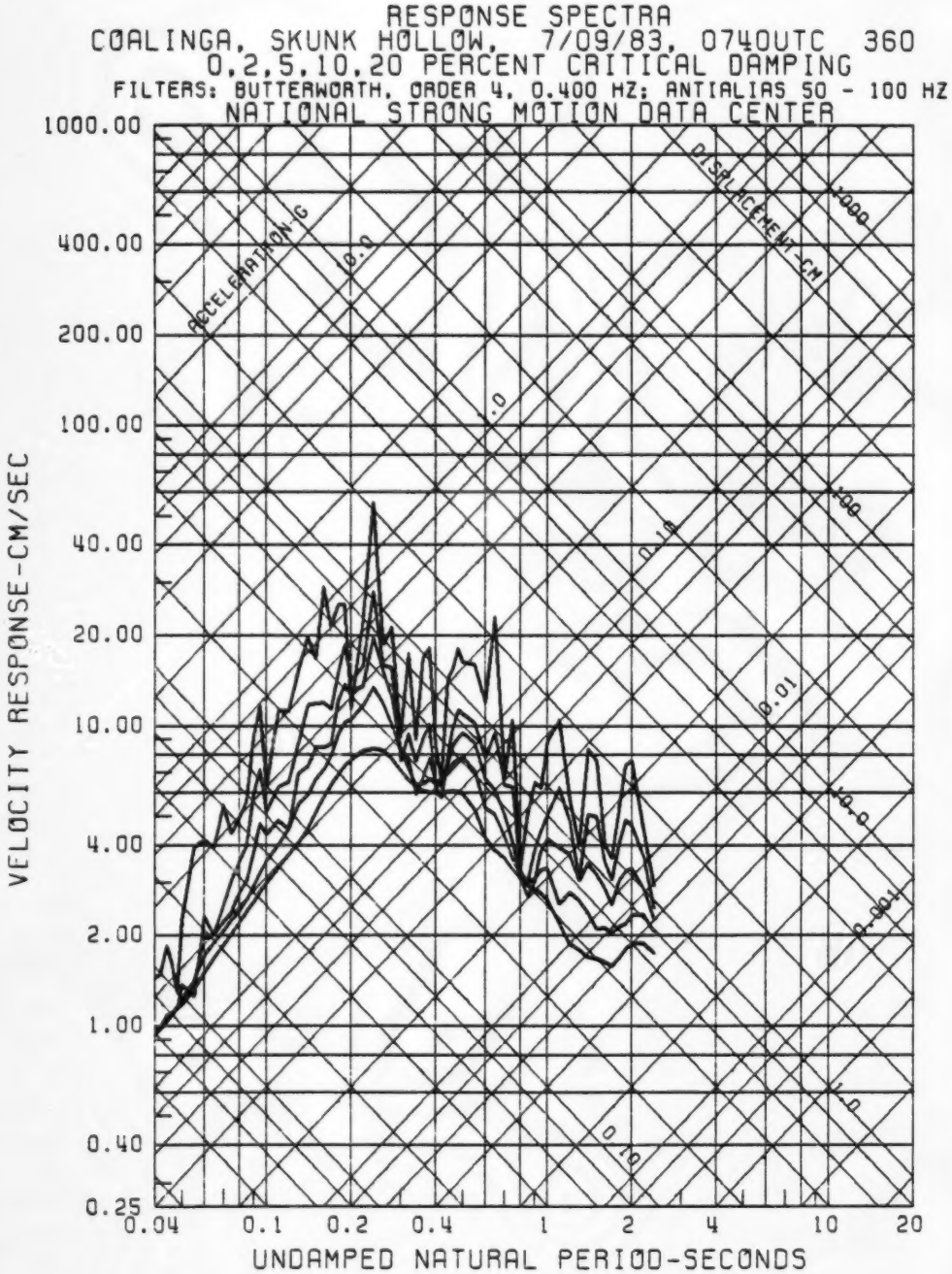
RESPONSE SPECTRA
COALINGA, SKUNK HOLLOW, 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
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0.2
0.4
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10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
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1.0
0.1
0.01
0.10
DISPLACEMENT-CM
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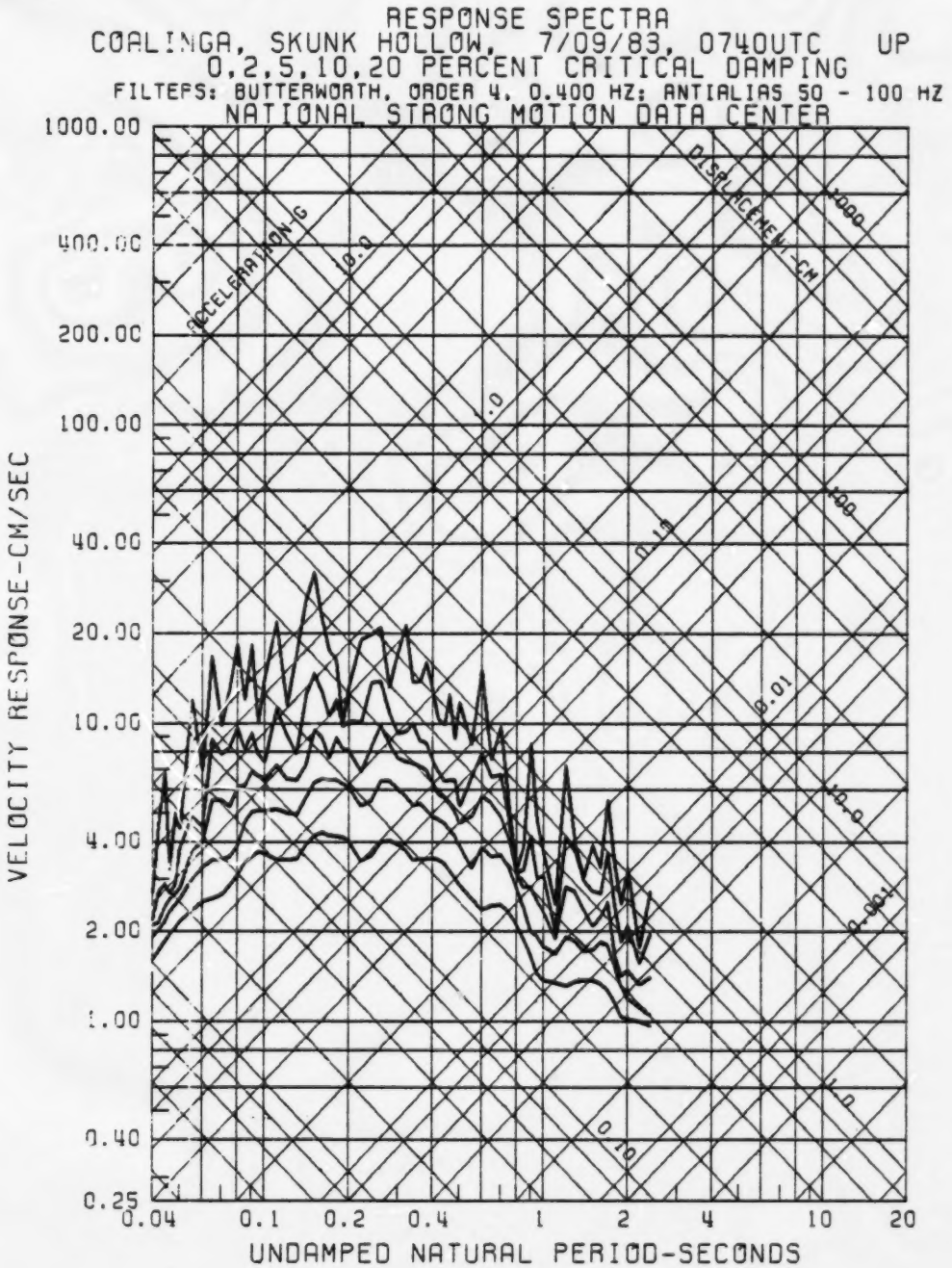
RESPONSE SPECTRA
COALINGA, SKUNK HOLLOW, 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
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1
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4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
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DISPLACEMENT-CM
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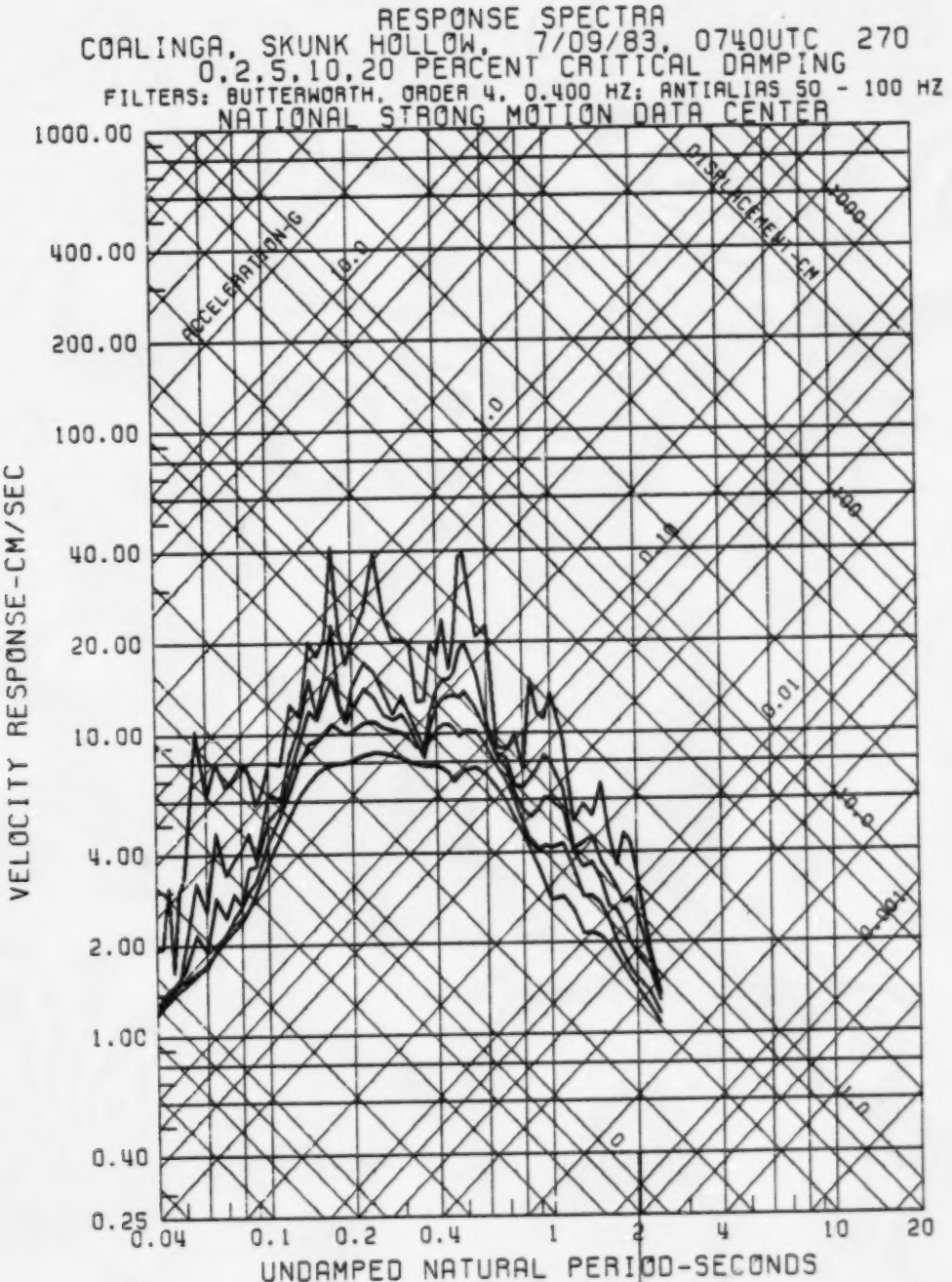
RESPONSE SPECTRA
COALINGA, SKUNK HOLLOW, 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
0.04
0.1
0.2
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1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
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1.0
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0
DISPLACEMENT-CM
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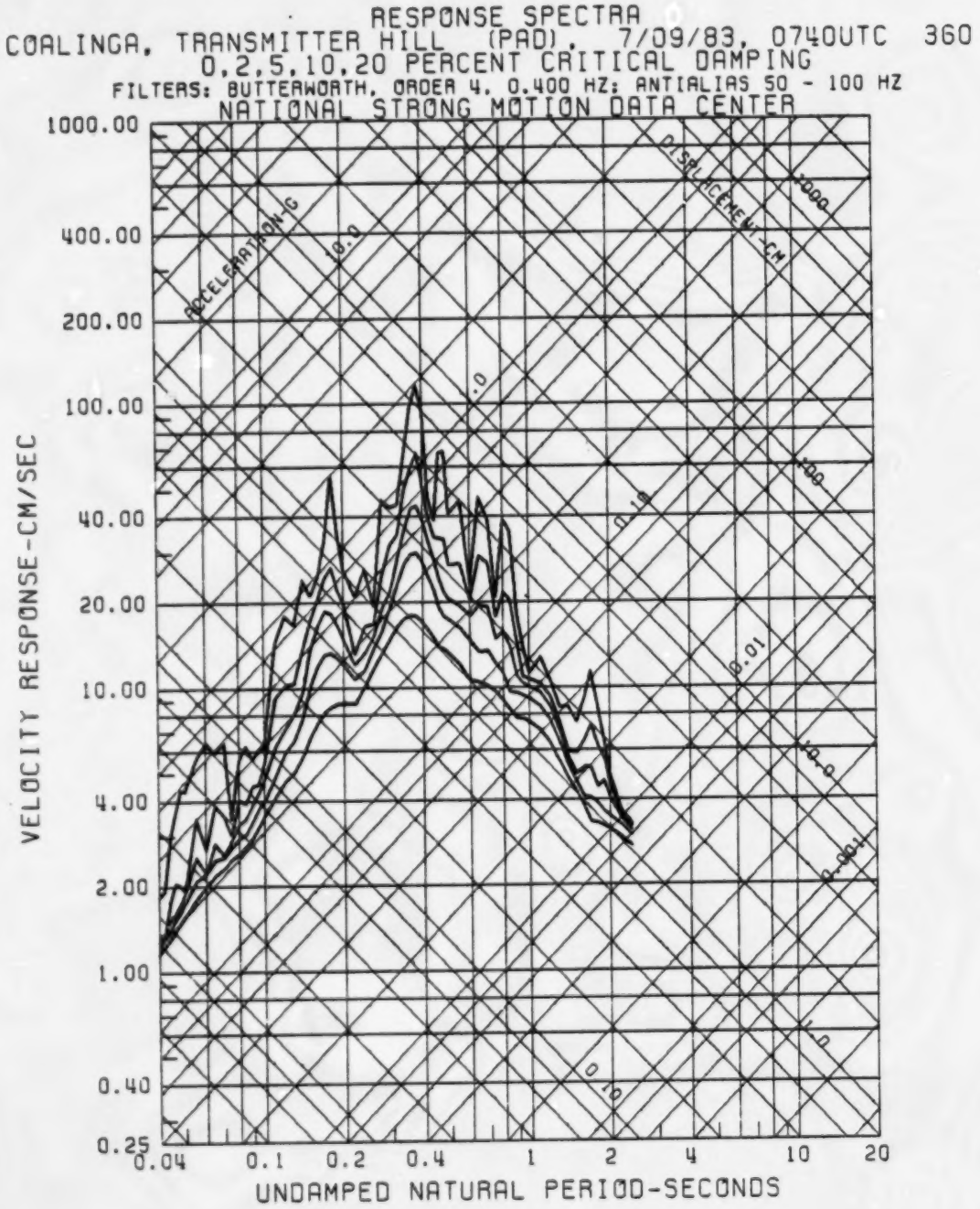
RESPONSE SPECTRA
COALINGA, TRANSMITTER HILL (PAD), 7/09/83, 0740UTC 360
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
ACCELERATION-G
PSEUDO-VELOCITY-CM
DISPLACEMENT-CM
VELOCITY RESPONSE-CM/SEC
UNDAMPED NATURAL PERIOD-SECONDS
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
1.00
0.40
0.25
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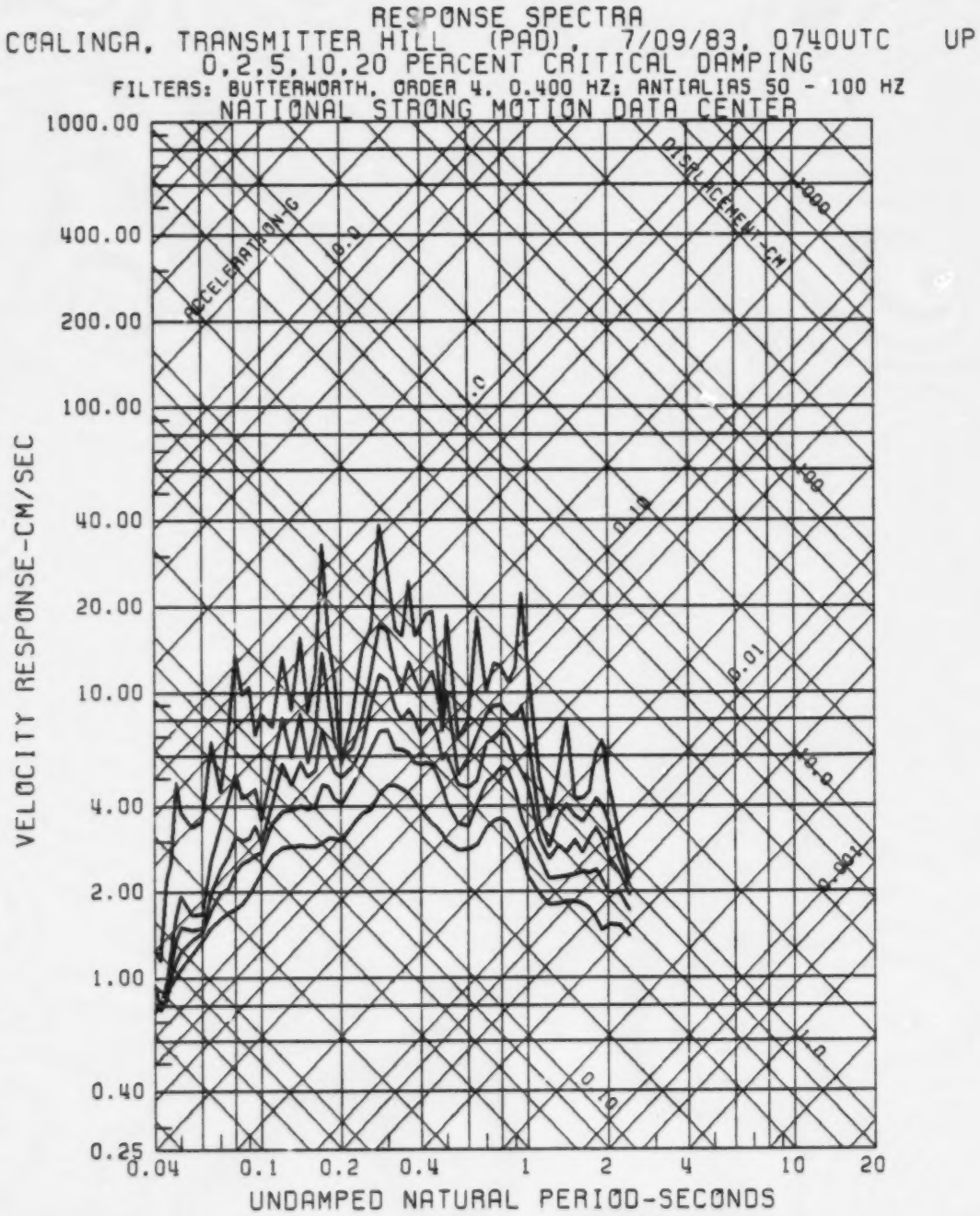
RESPONSE SPECTRA
COALINGA, TRANSMITTER HILL (PAD), 7/09/83, 0740UTC UP
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
2.00
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0.40
0.25
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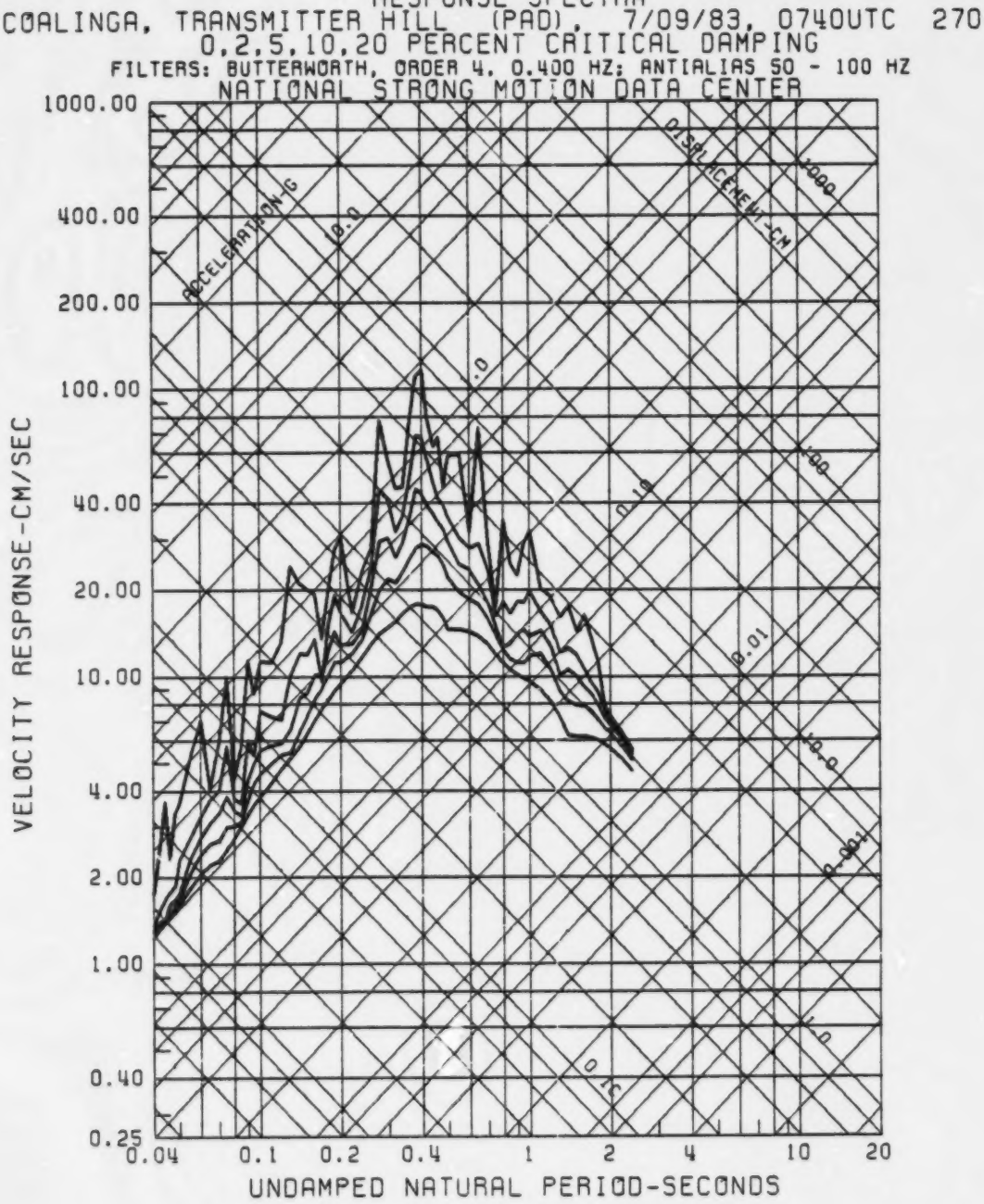
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
10.0
1.0
0.10
0.01
DISPLACEMENT-CM
1000
100
10.0
1.0
0.10


RESPONSE SPECTRA
COALINGA, TRANSMITTER HILL (PAD), 7/09/83, 0740UTC 270
0,2,5,10,20 PERCENT CRITICAL DAMPING
FILTERS: BUTTERWORTH, ORDER 4, 0.400 HZ; ANTIALIAS 50 - 100 HZ
NATIONAL STRONG MOTION DATA CENTER
VELOCITY RESPONSE-CM/SEC
1000.00
400.00
200.00
100.00
40.00
20.00
10.00
4.00
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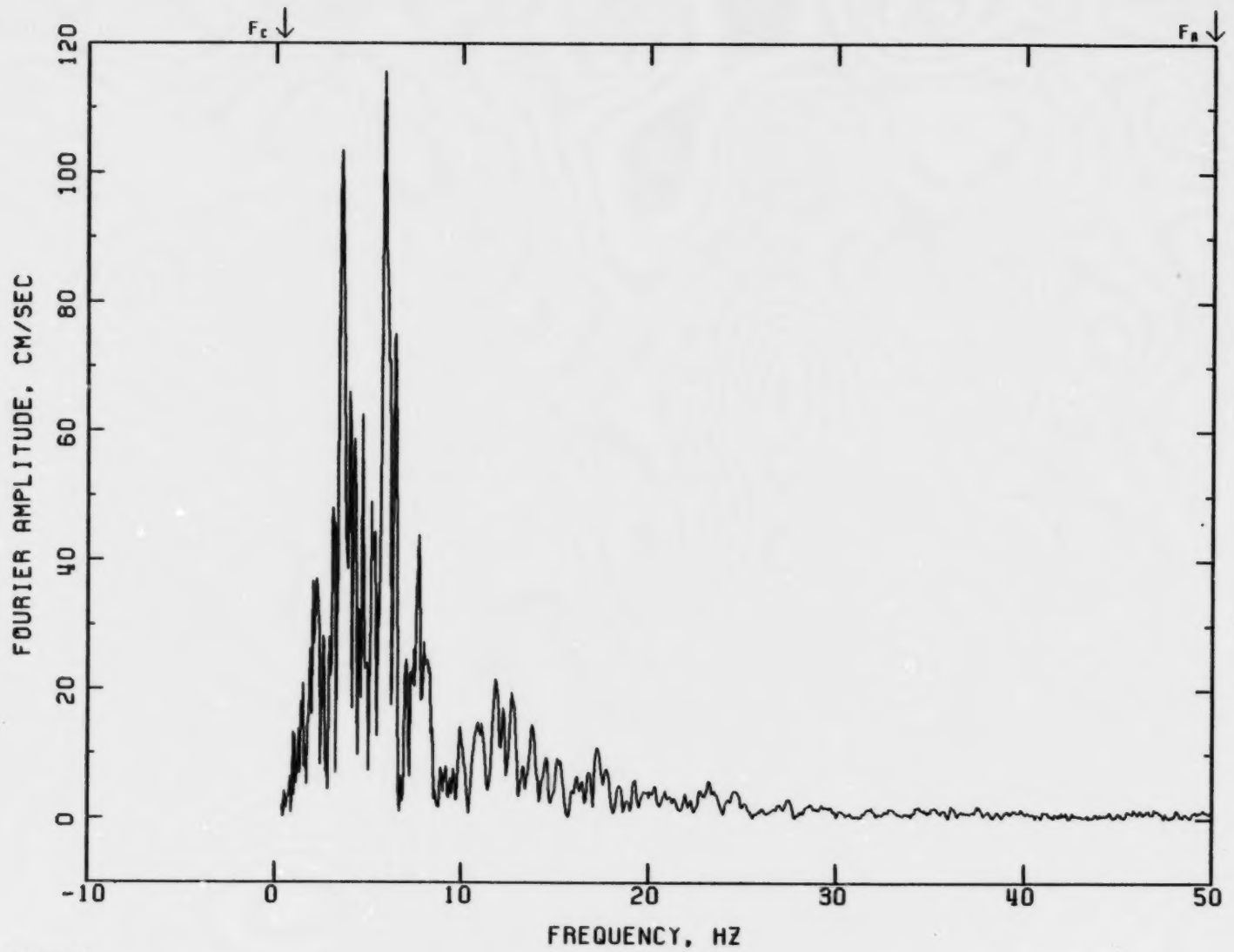
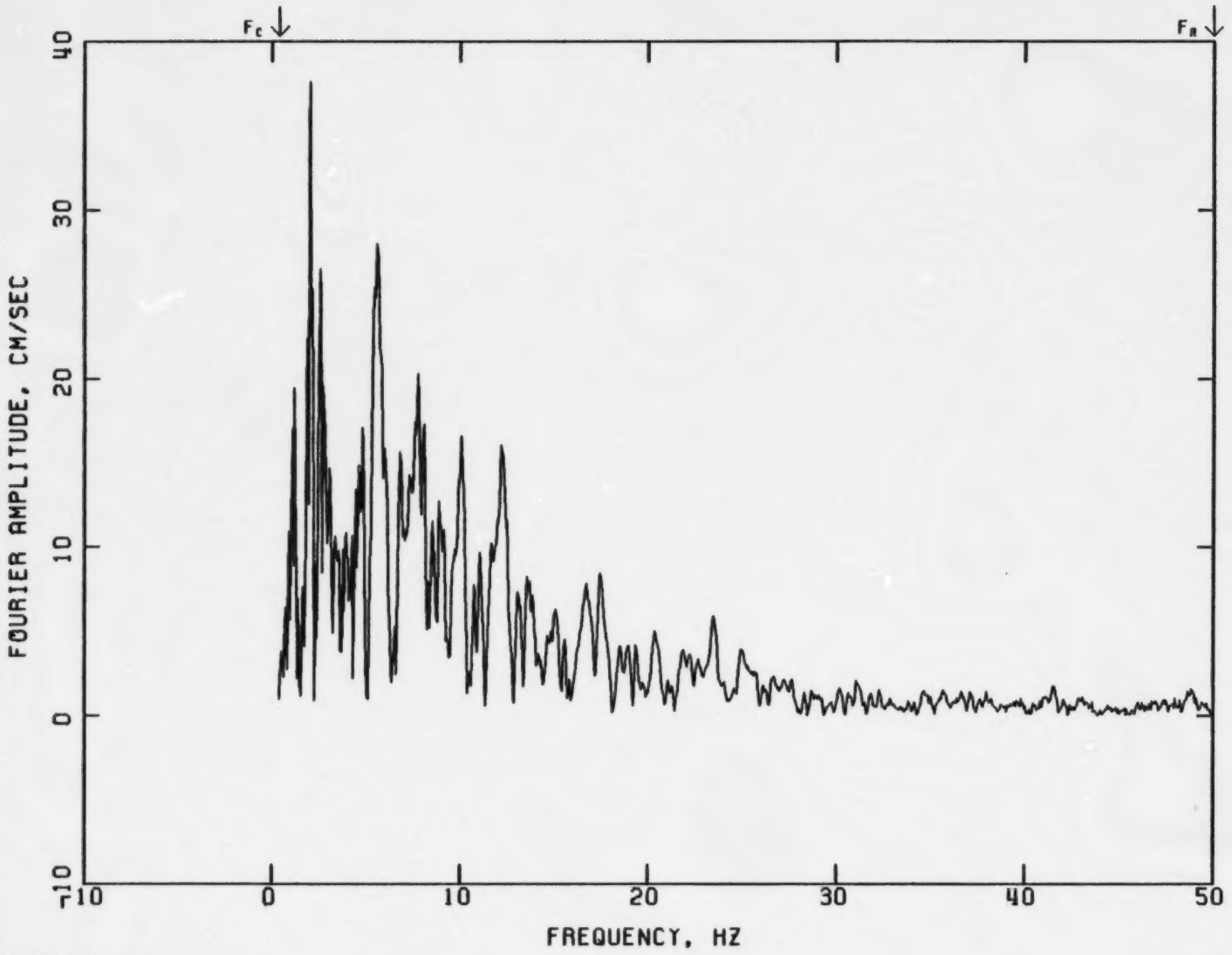
0.40
0.25
0.04
0.1
0.2
0.4
1
2
4
10
20
UNDAMPED NATURAL PERIOD-SECONDS
ACCELERATION-G
DISPLACEMENT-CM
1000
100
10.0
1.0
0.1
0.01
.0
.1
.01



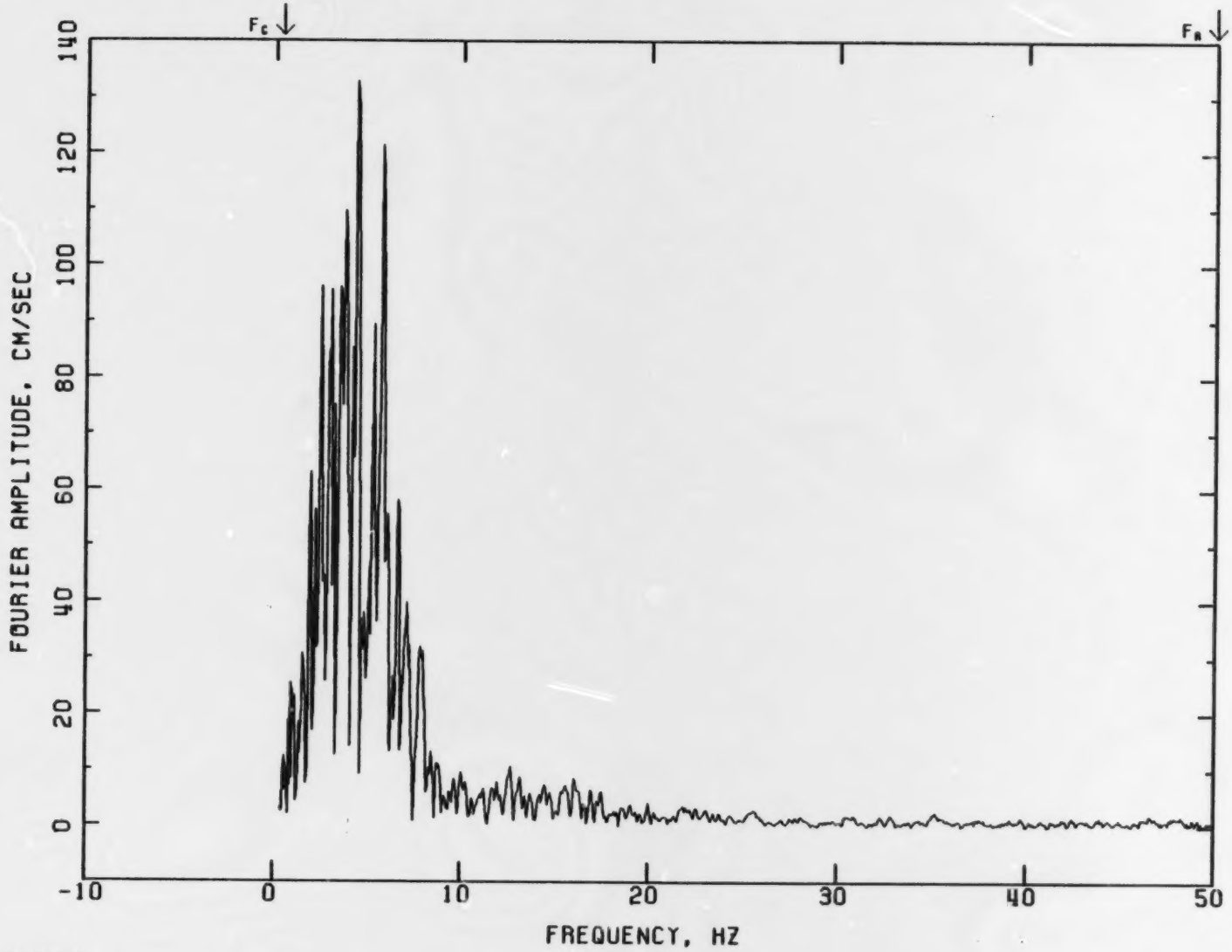
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (FREE FIELD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



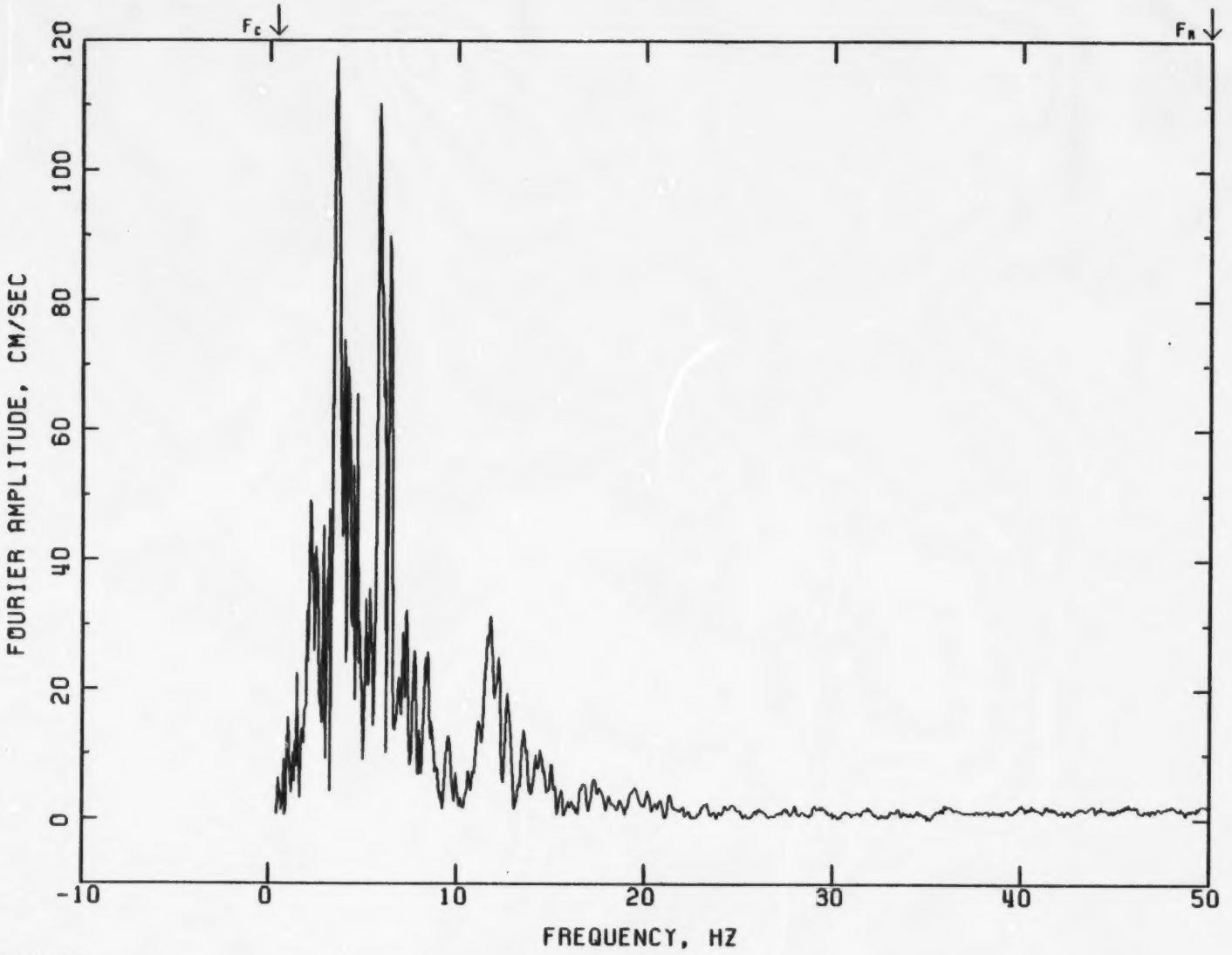
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (FREE FIELD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ. ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



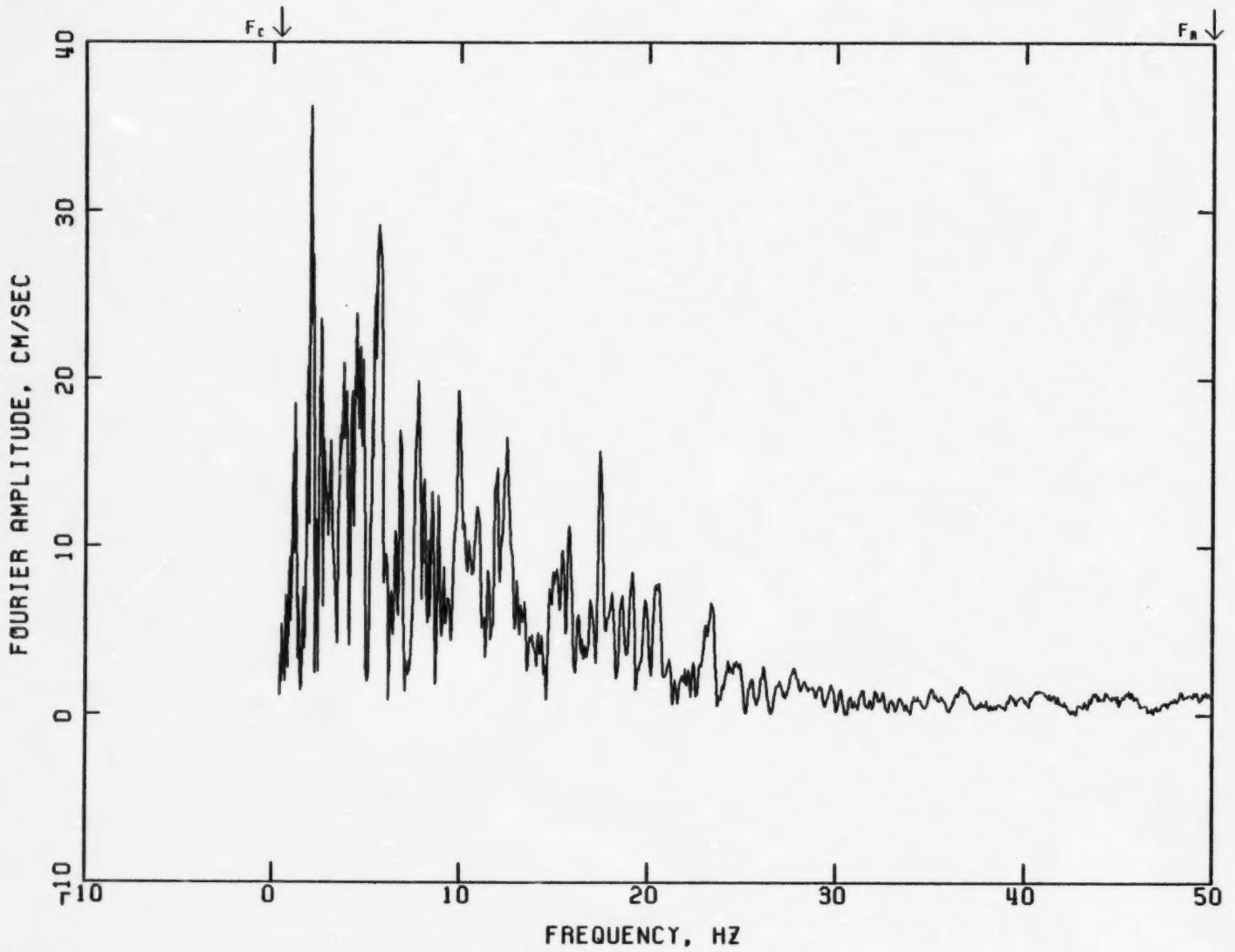
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (FREE FIELD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ. ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



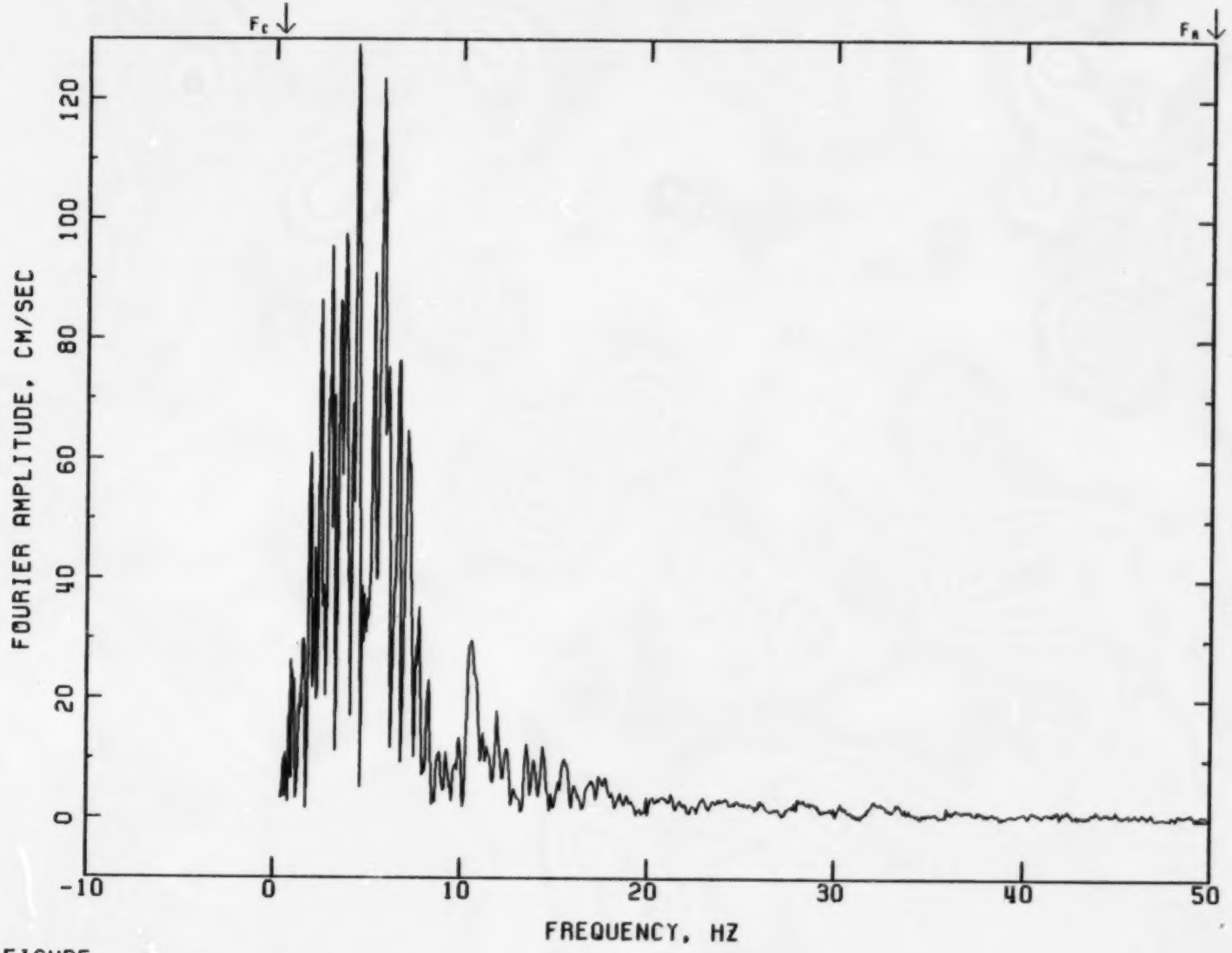
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (PAD SITE)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



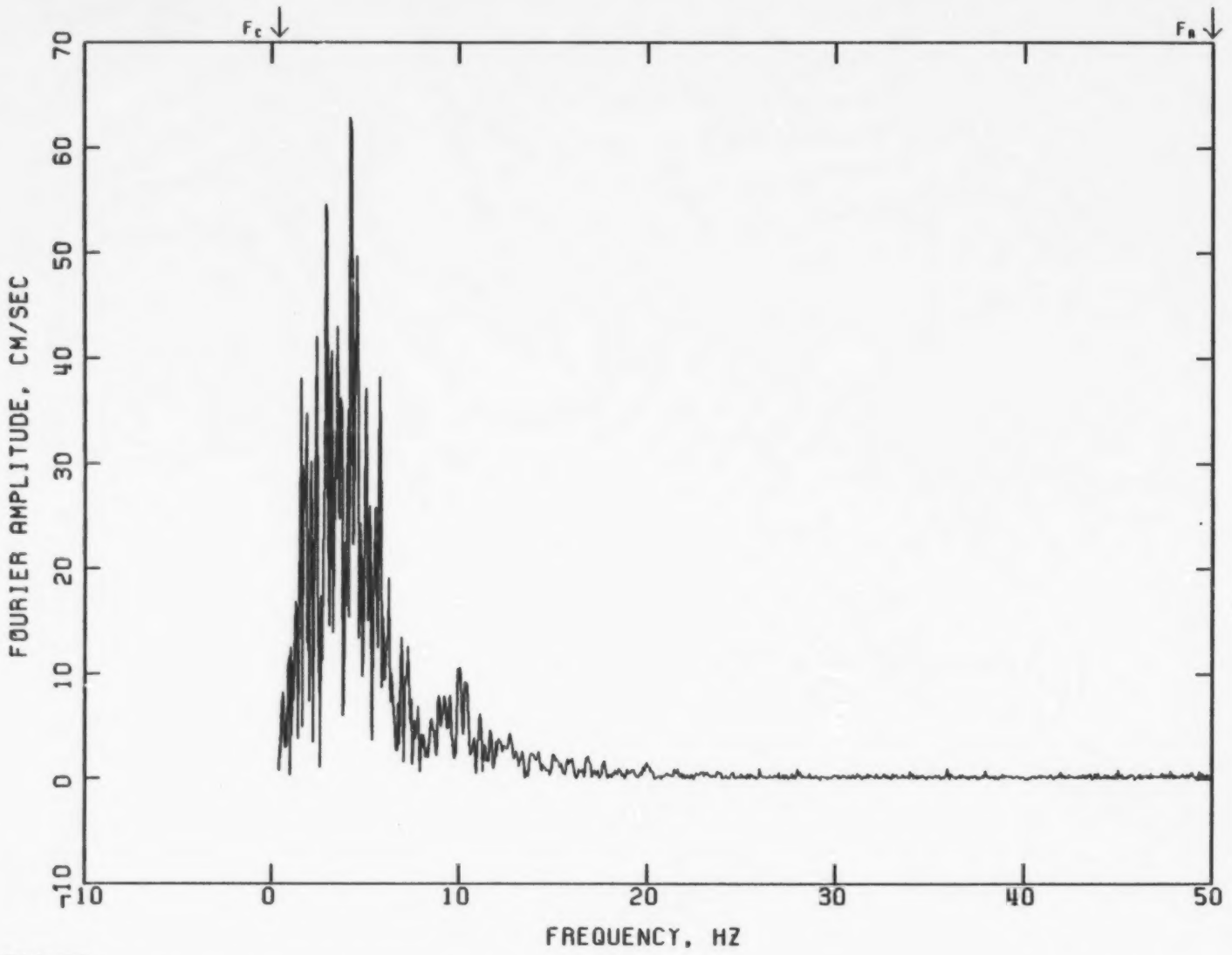
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (PAD SITE)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



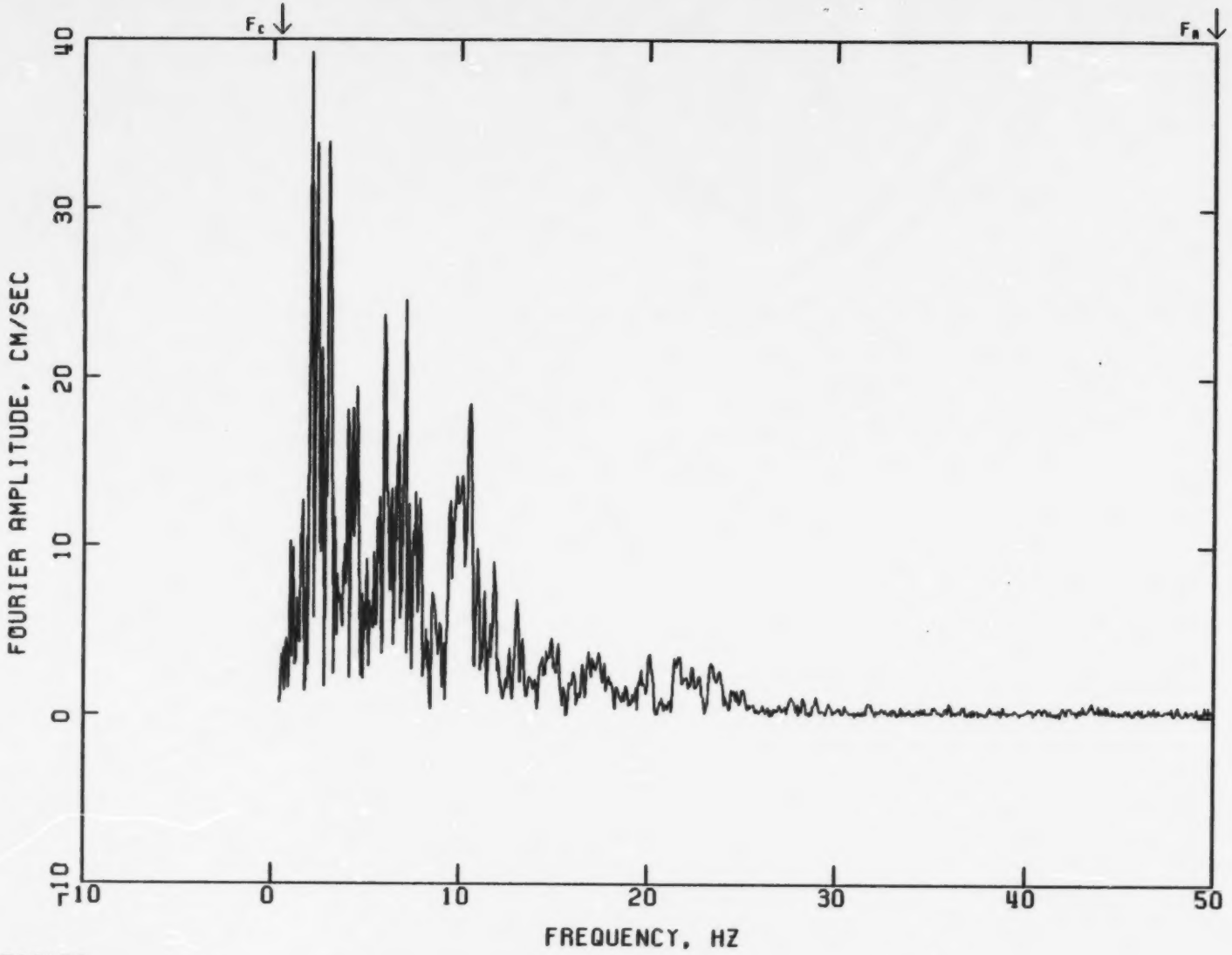
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (PAD SITE)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



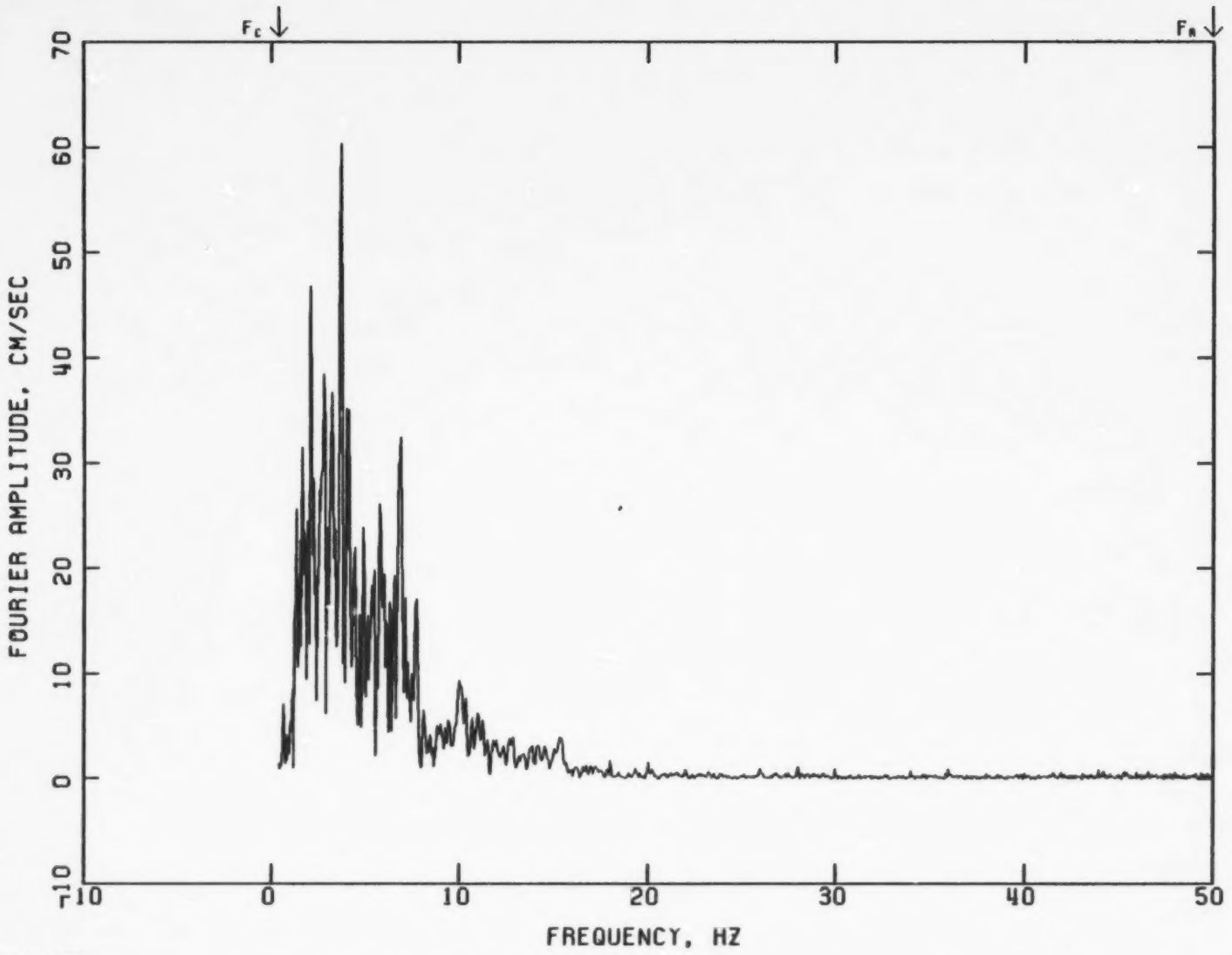
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, BURNETT CONSTRUCTION
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



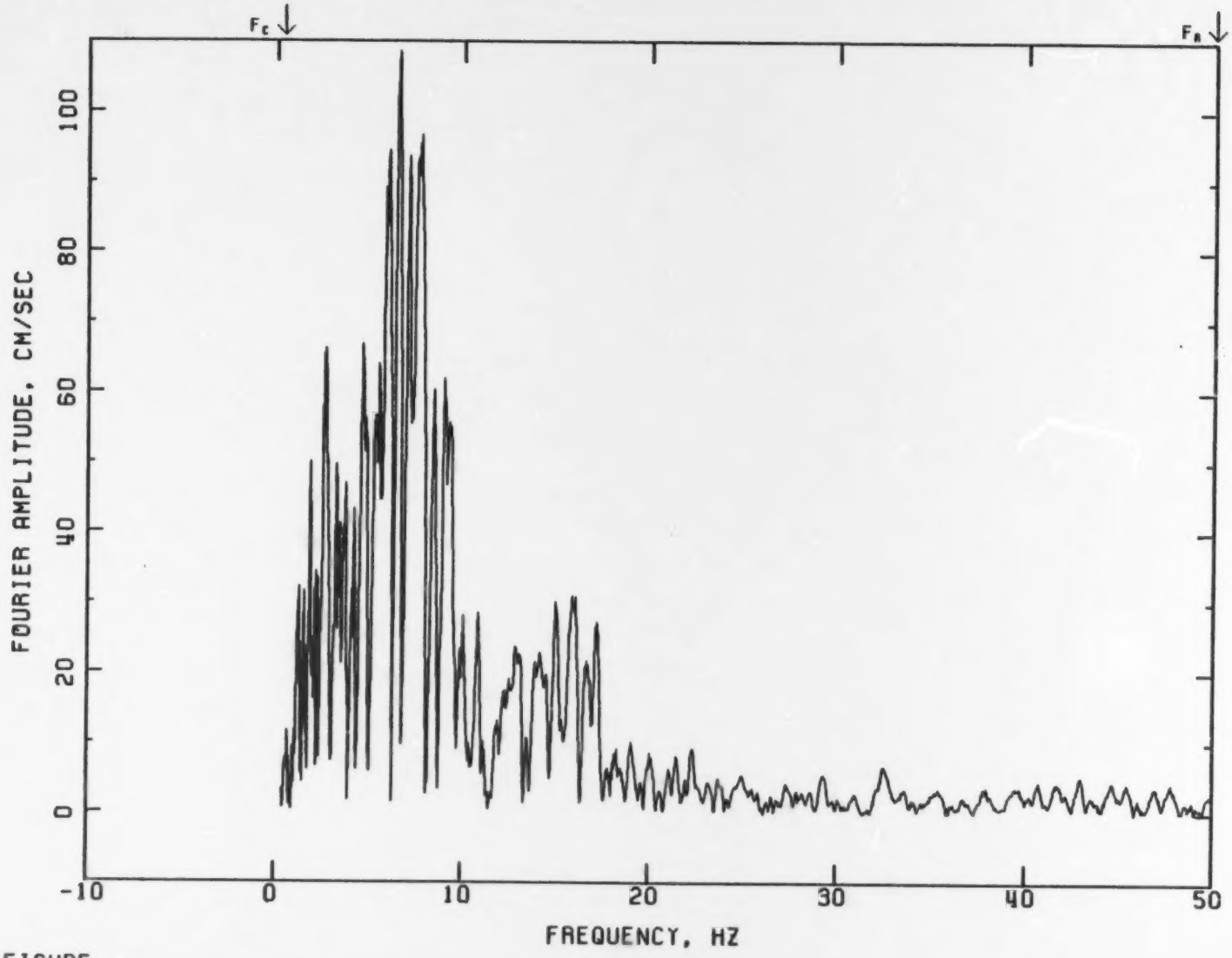
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, BURNETT CONSTRUCTION
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



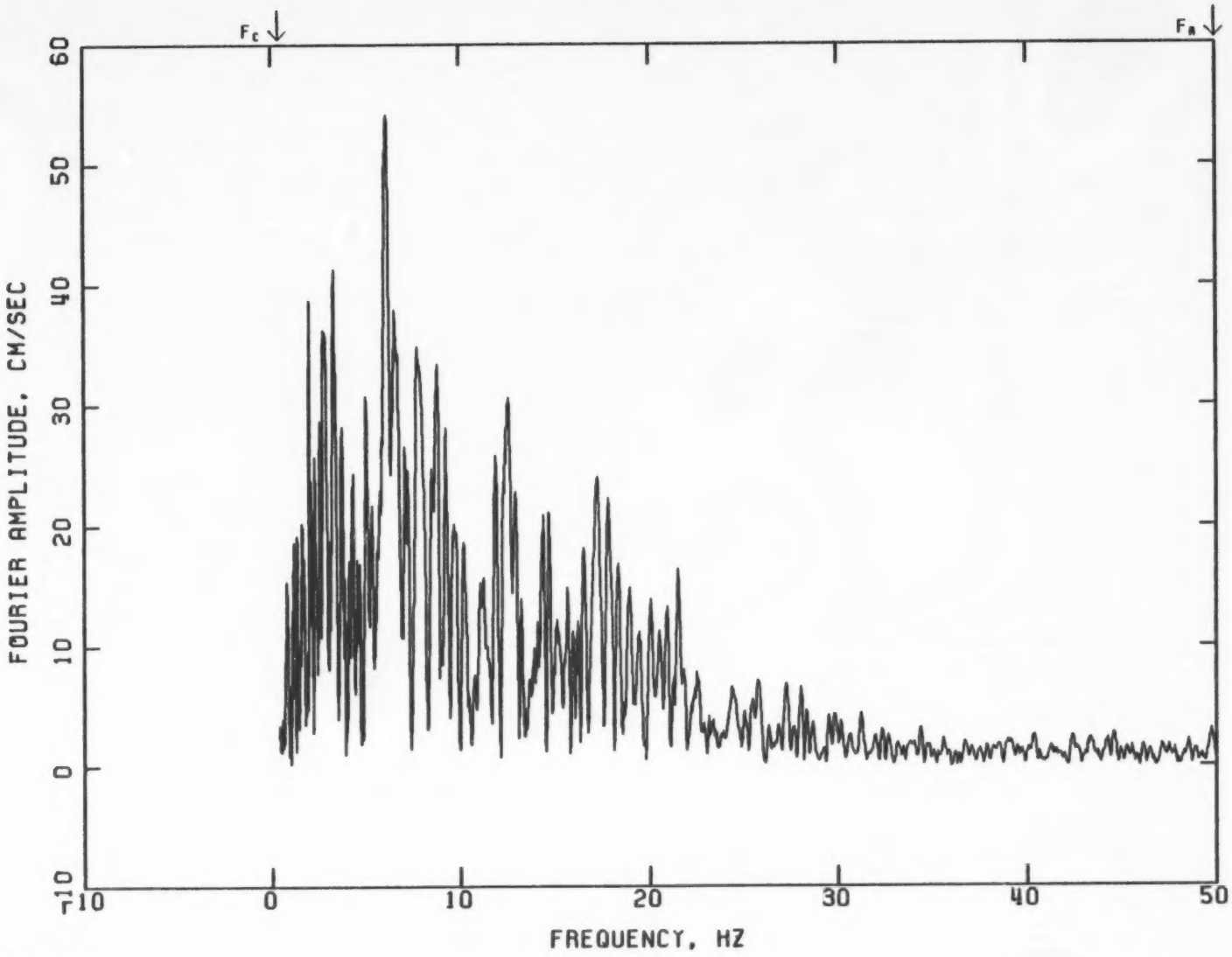
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, BURNETT CONSTRUCTION
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



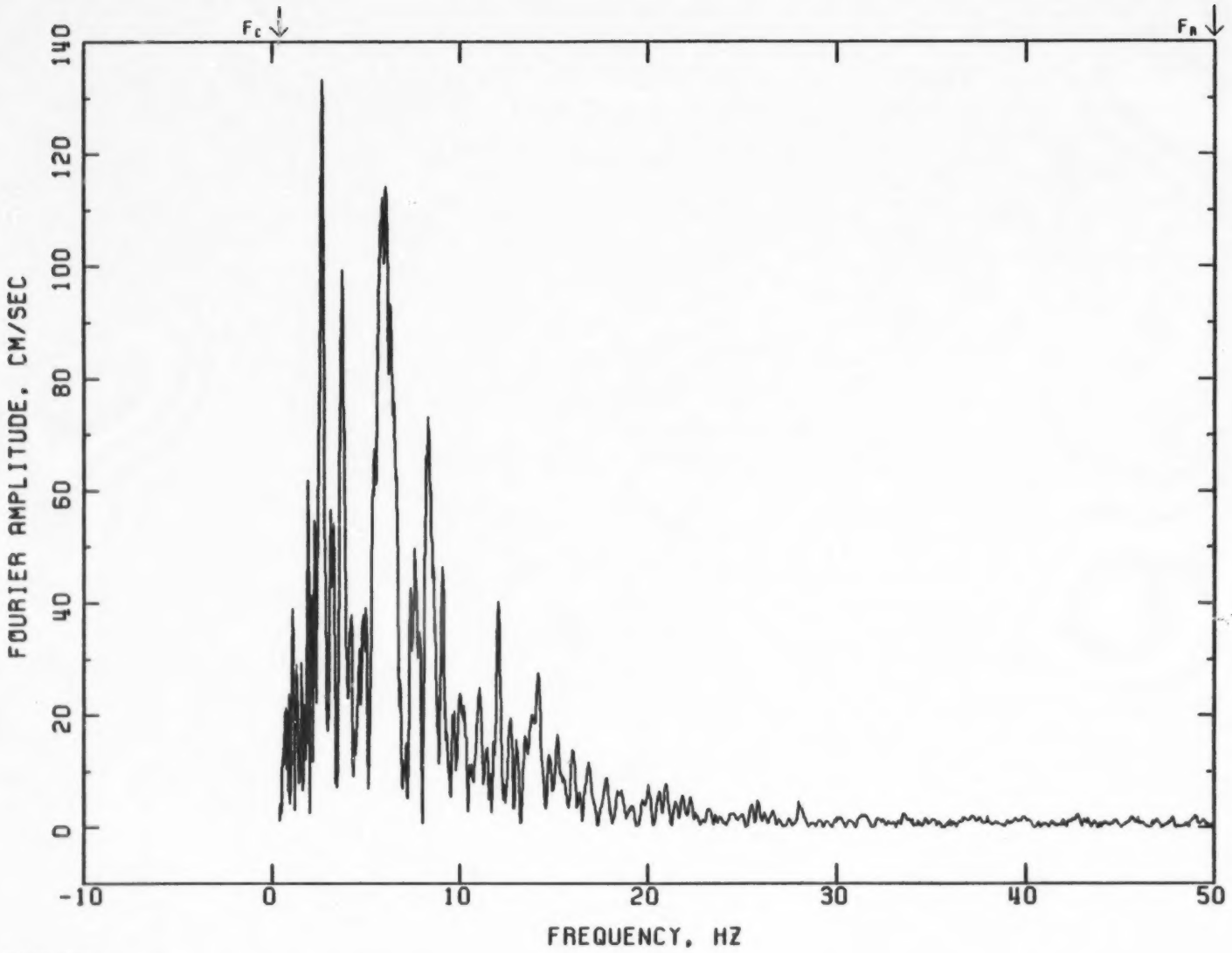
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL CITY
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



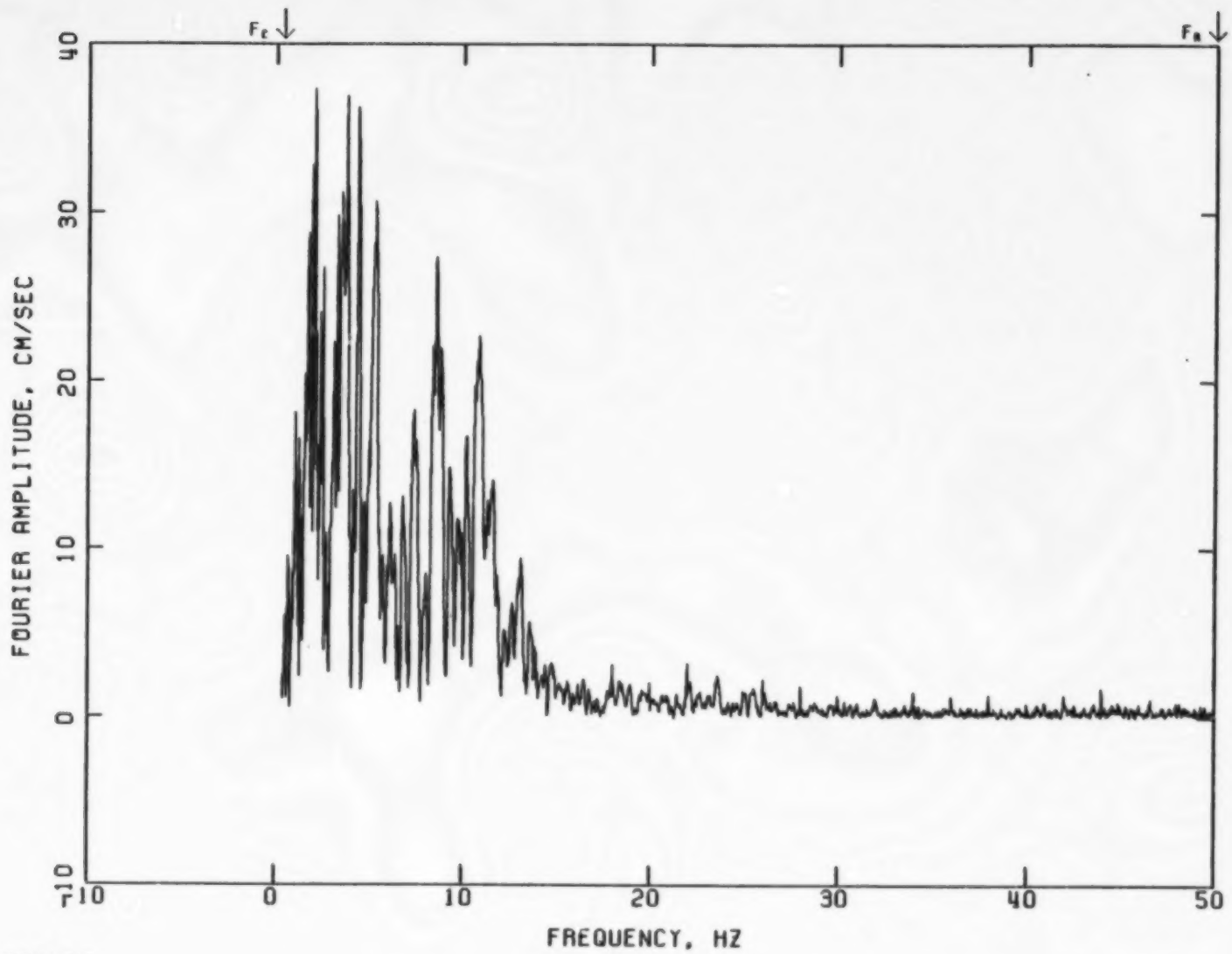
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL CITY
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



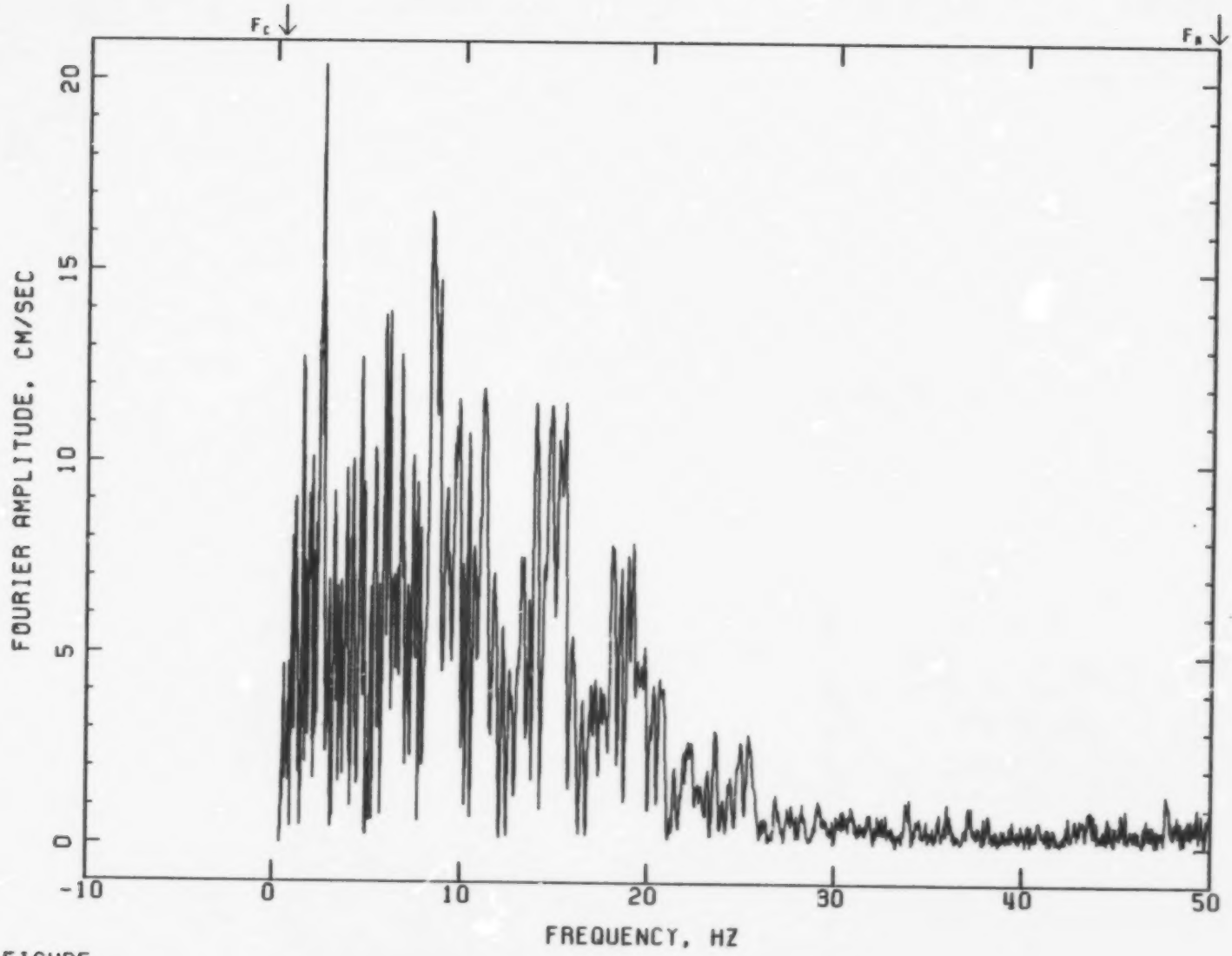
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL CITY
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



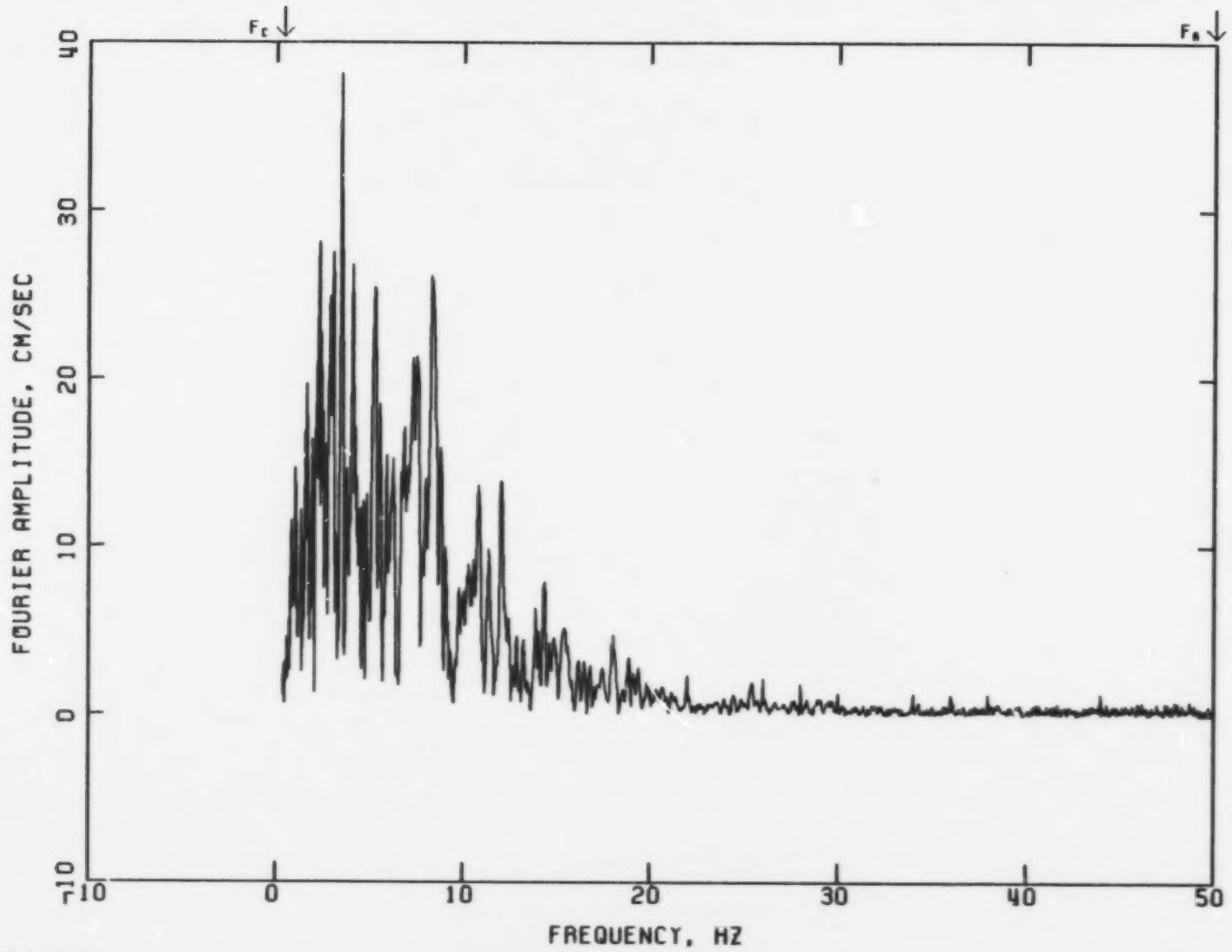
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION,
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



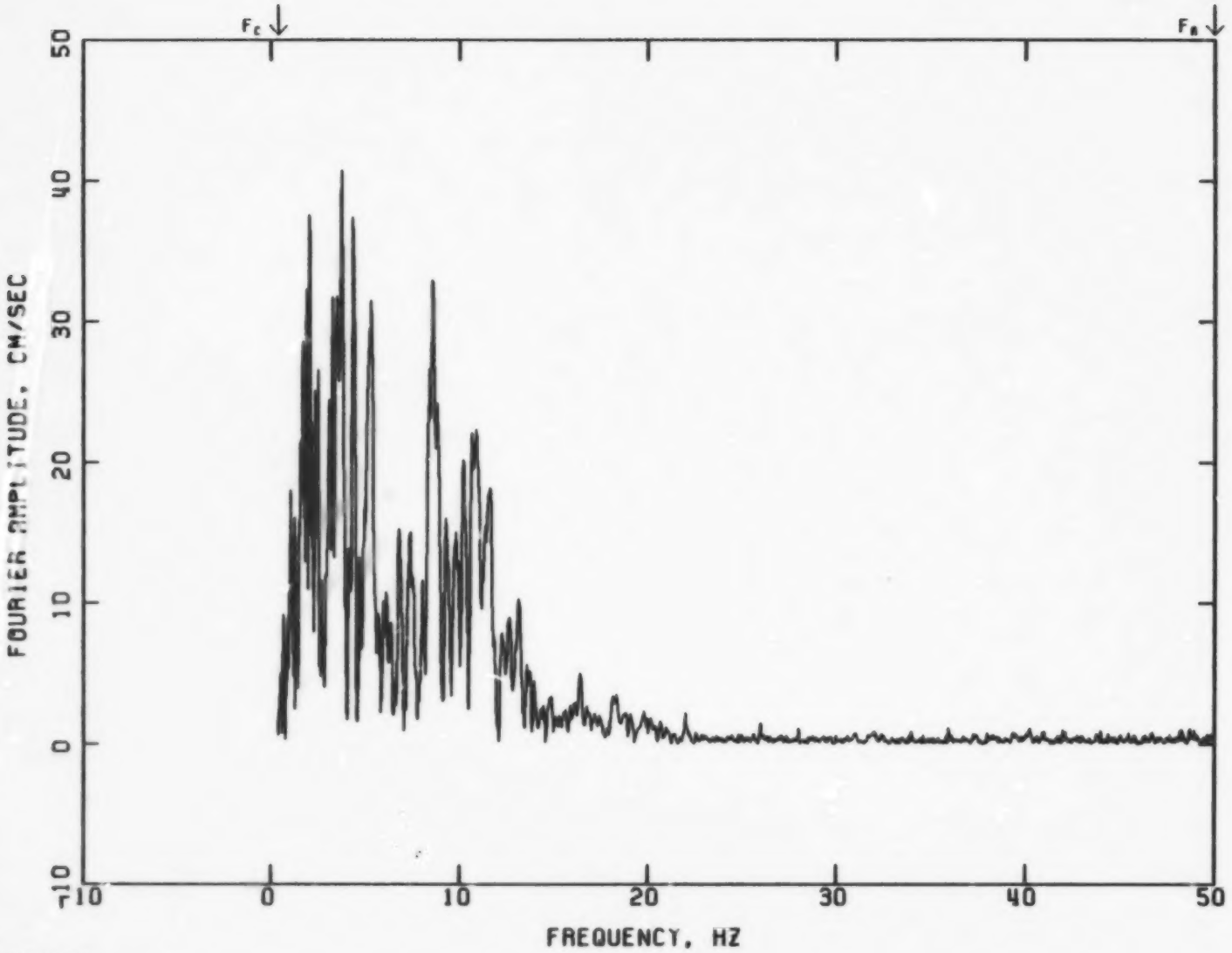
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



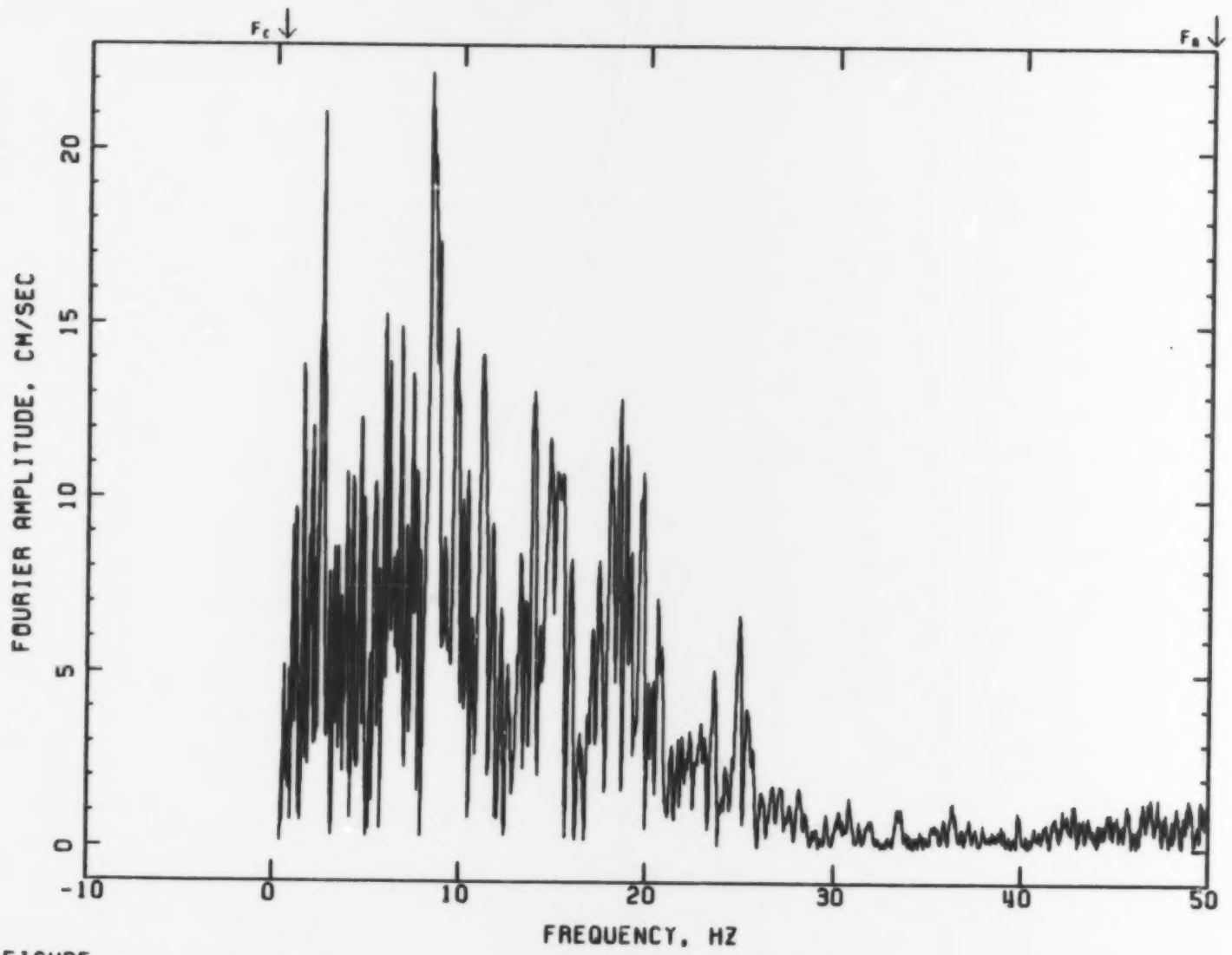
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



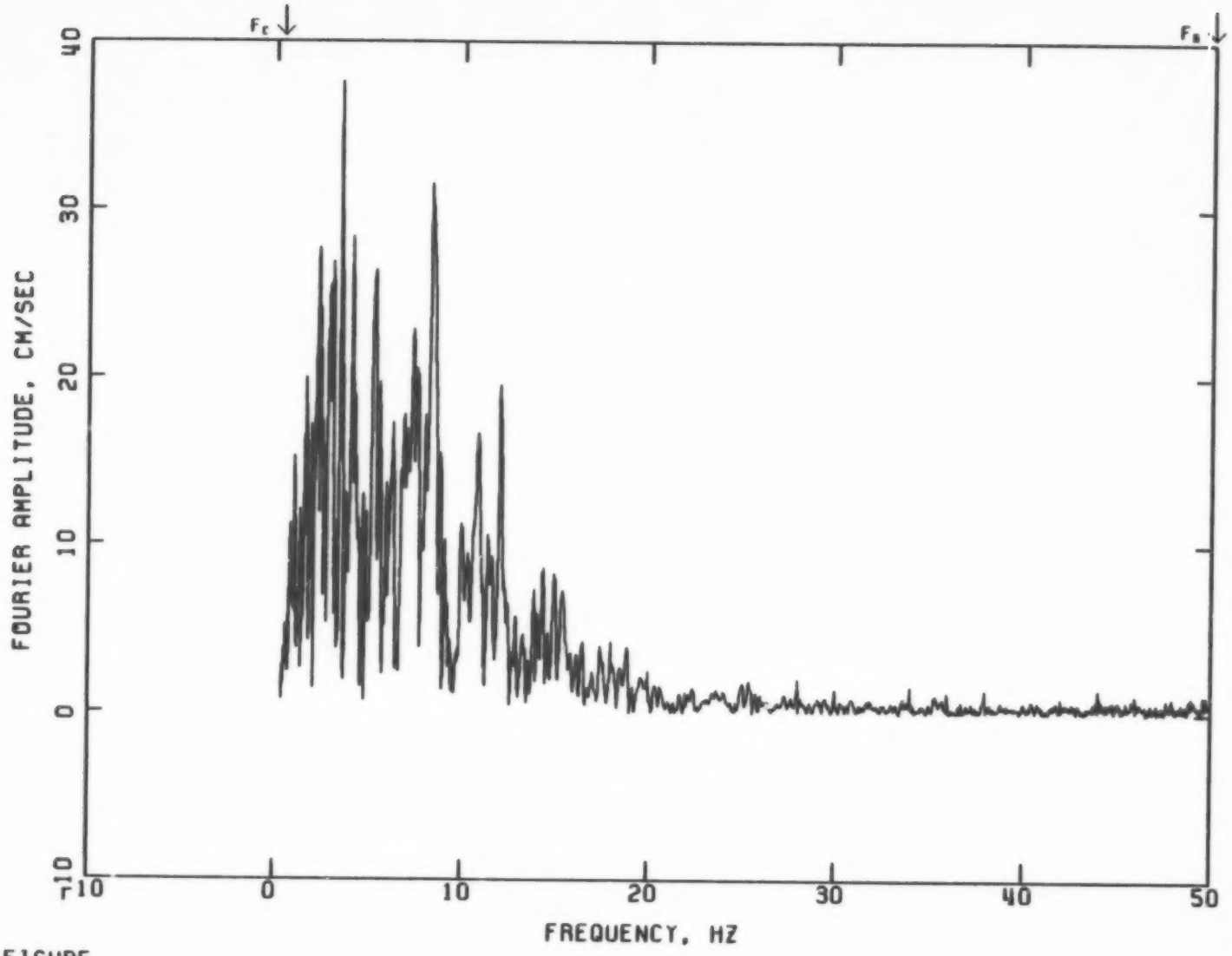
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (PAD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



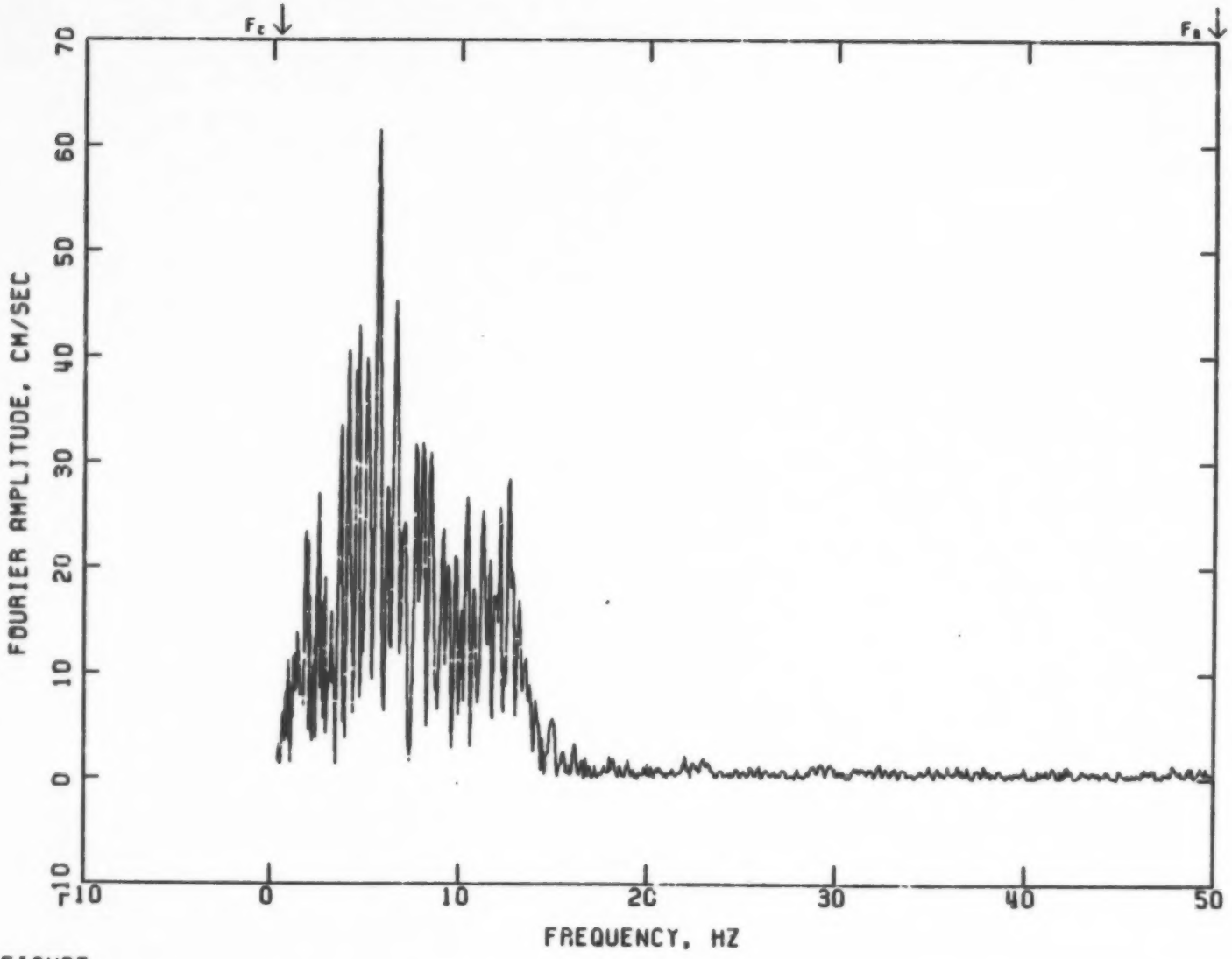
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (PAD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



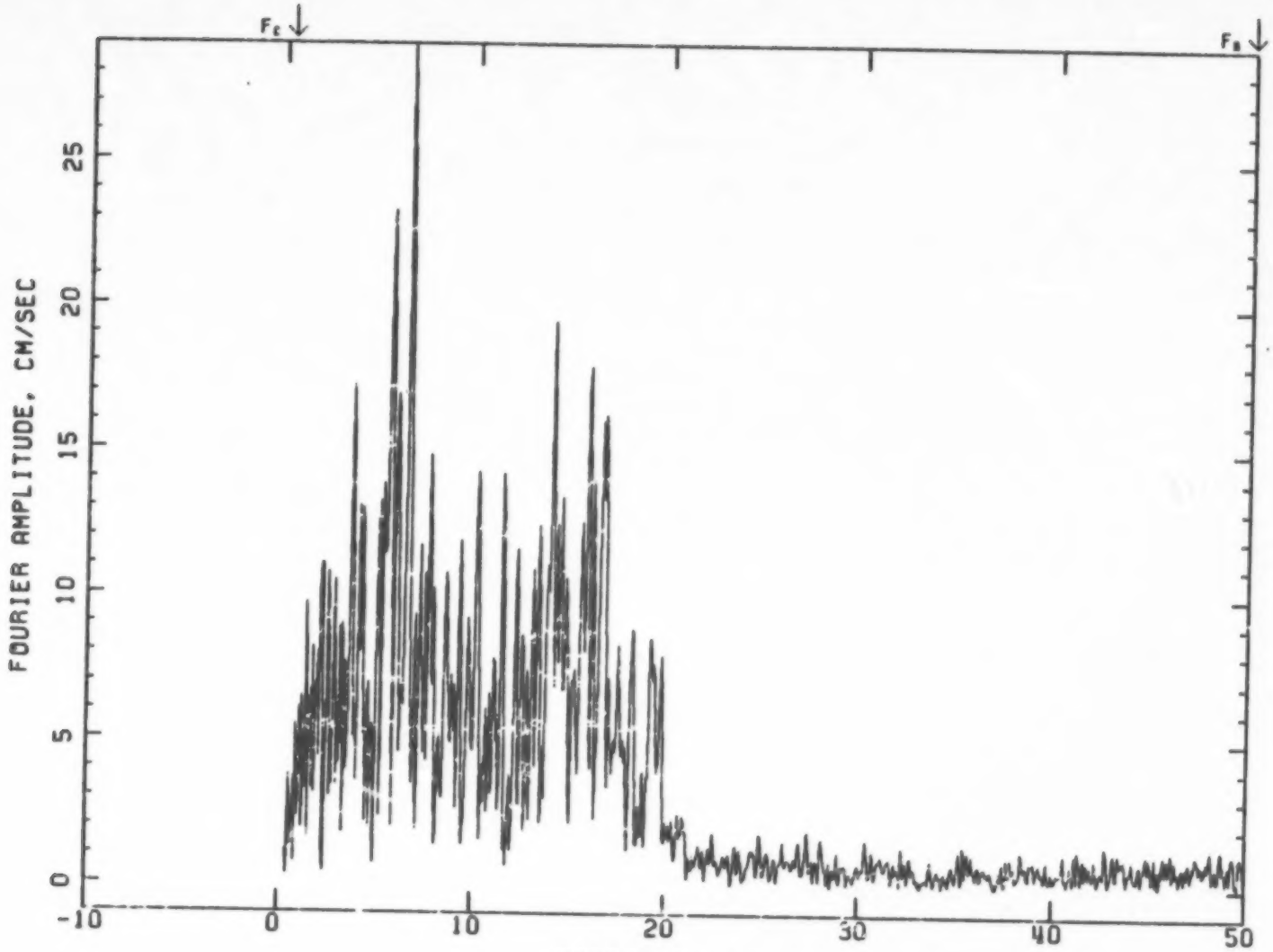
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (PAD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



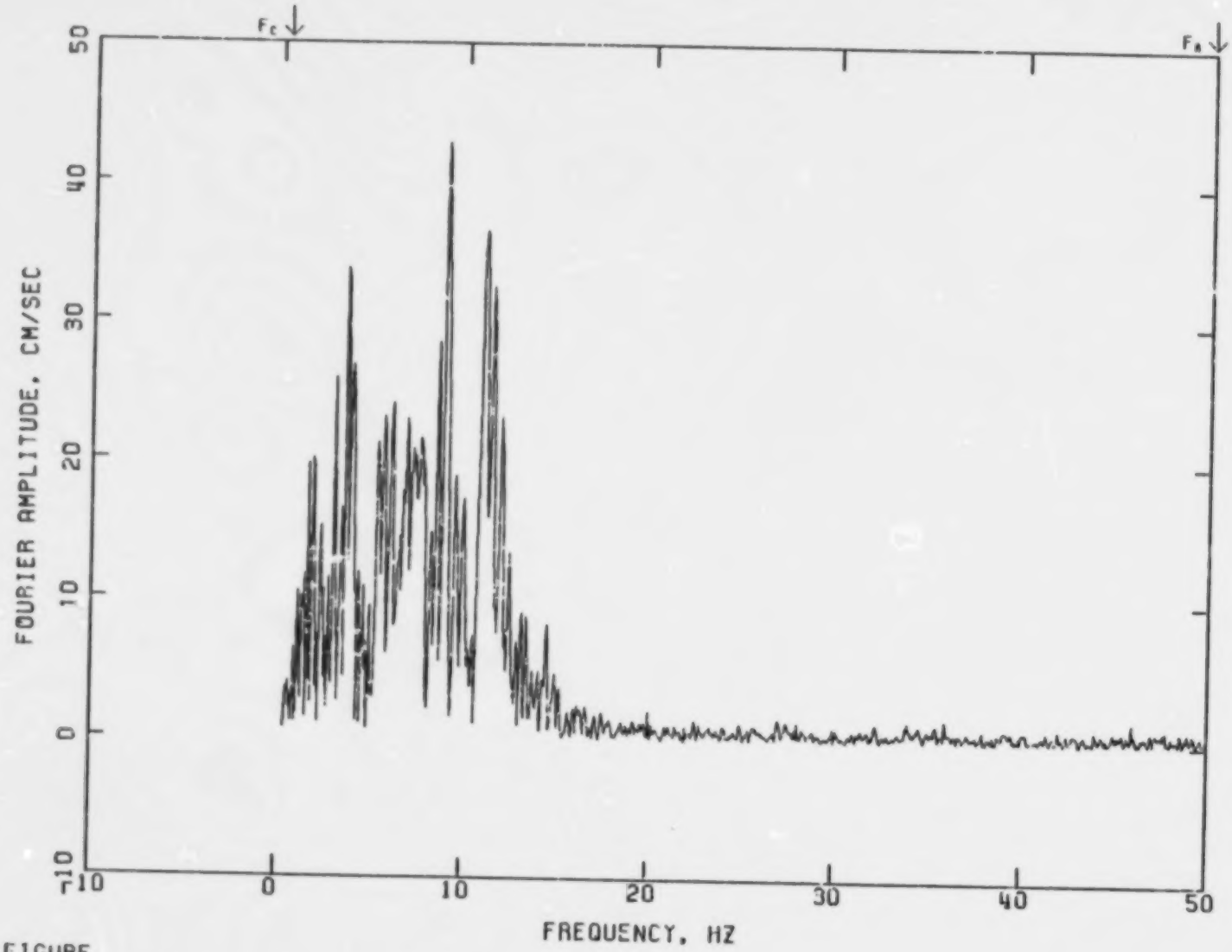
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, PALMER AVENUE
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



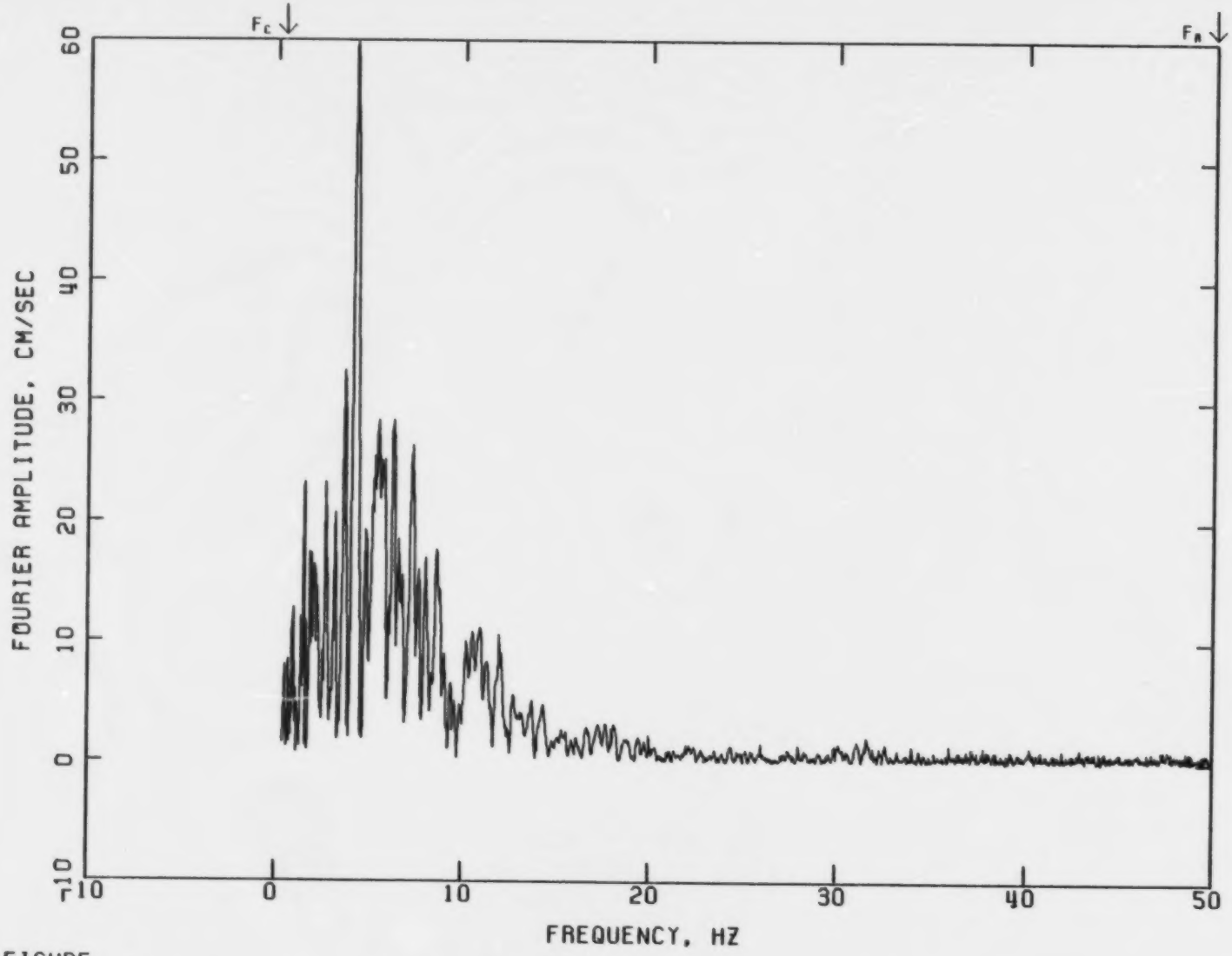
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, PALMER AVENUE
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



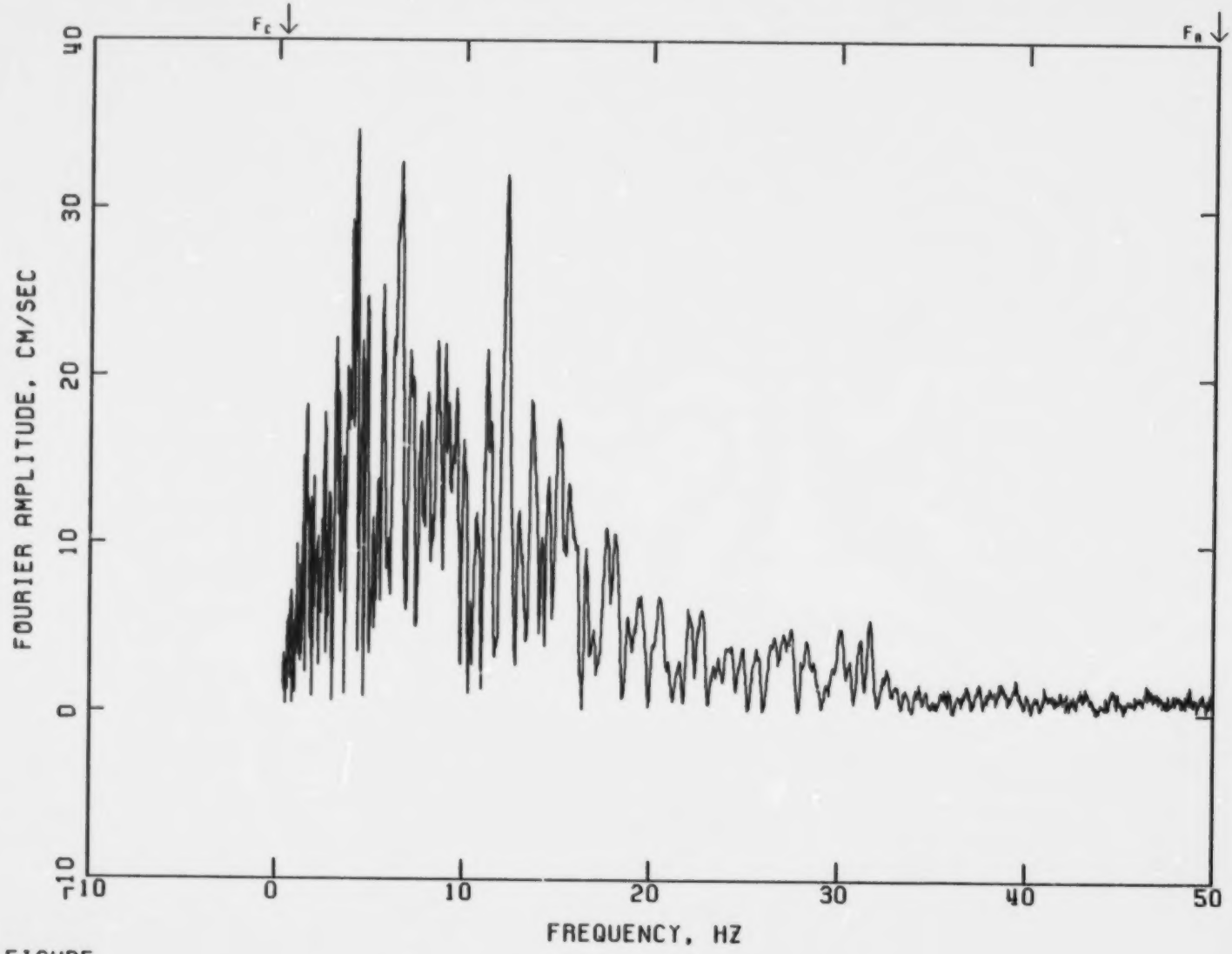
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, PALMER AVENUE
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



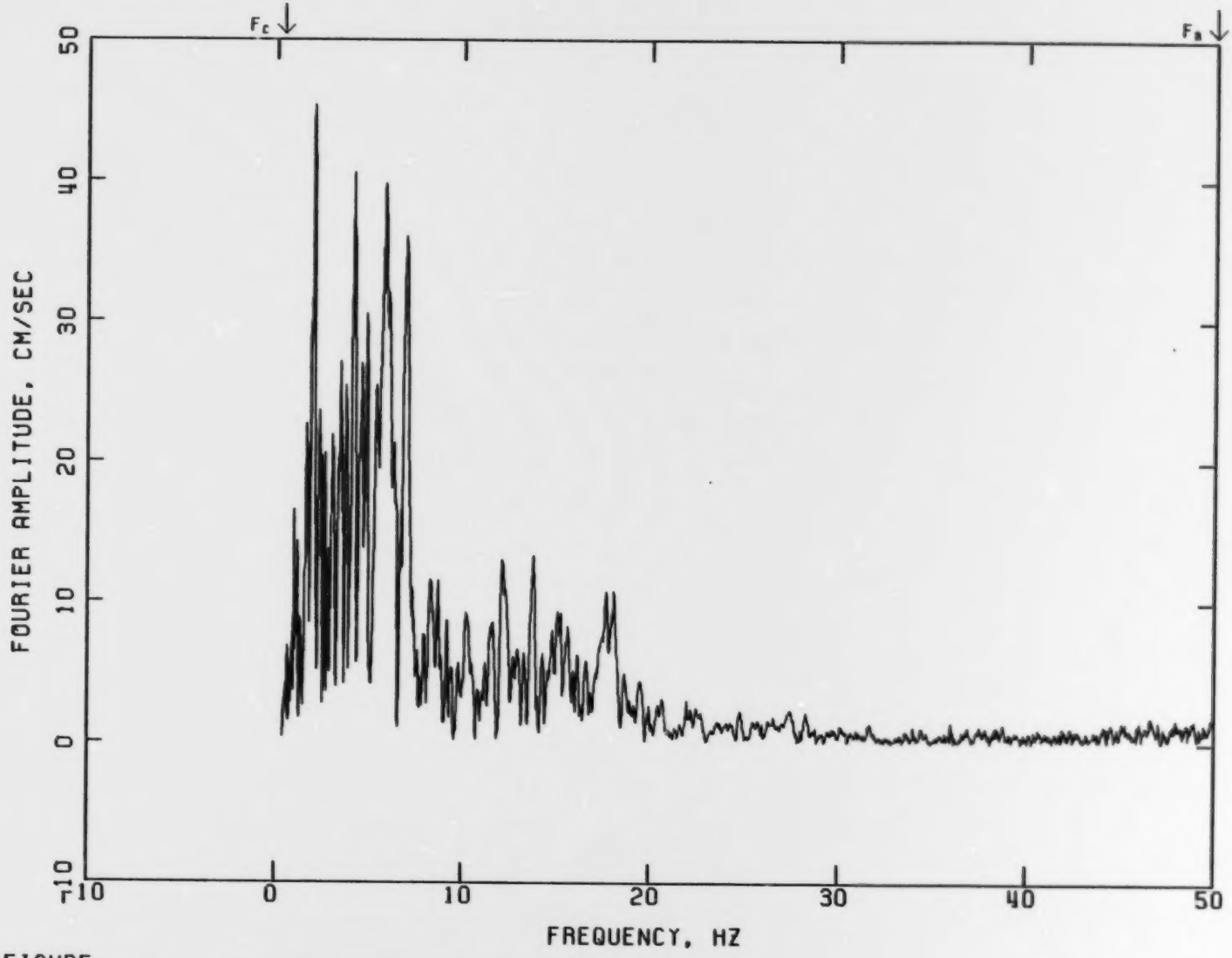
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, SKUNK HOLLOW
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



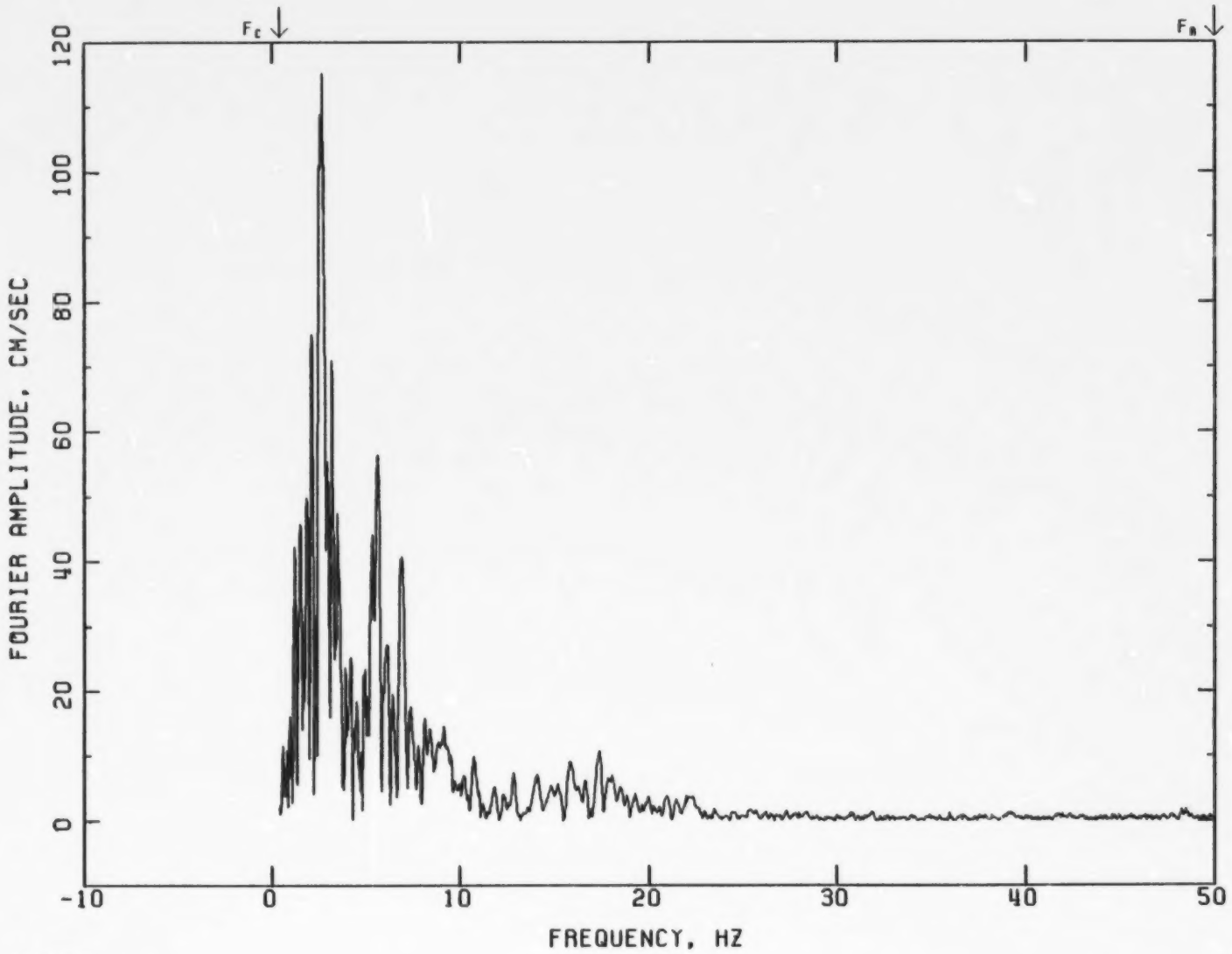
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, SKUNK HOLLOW
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



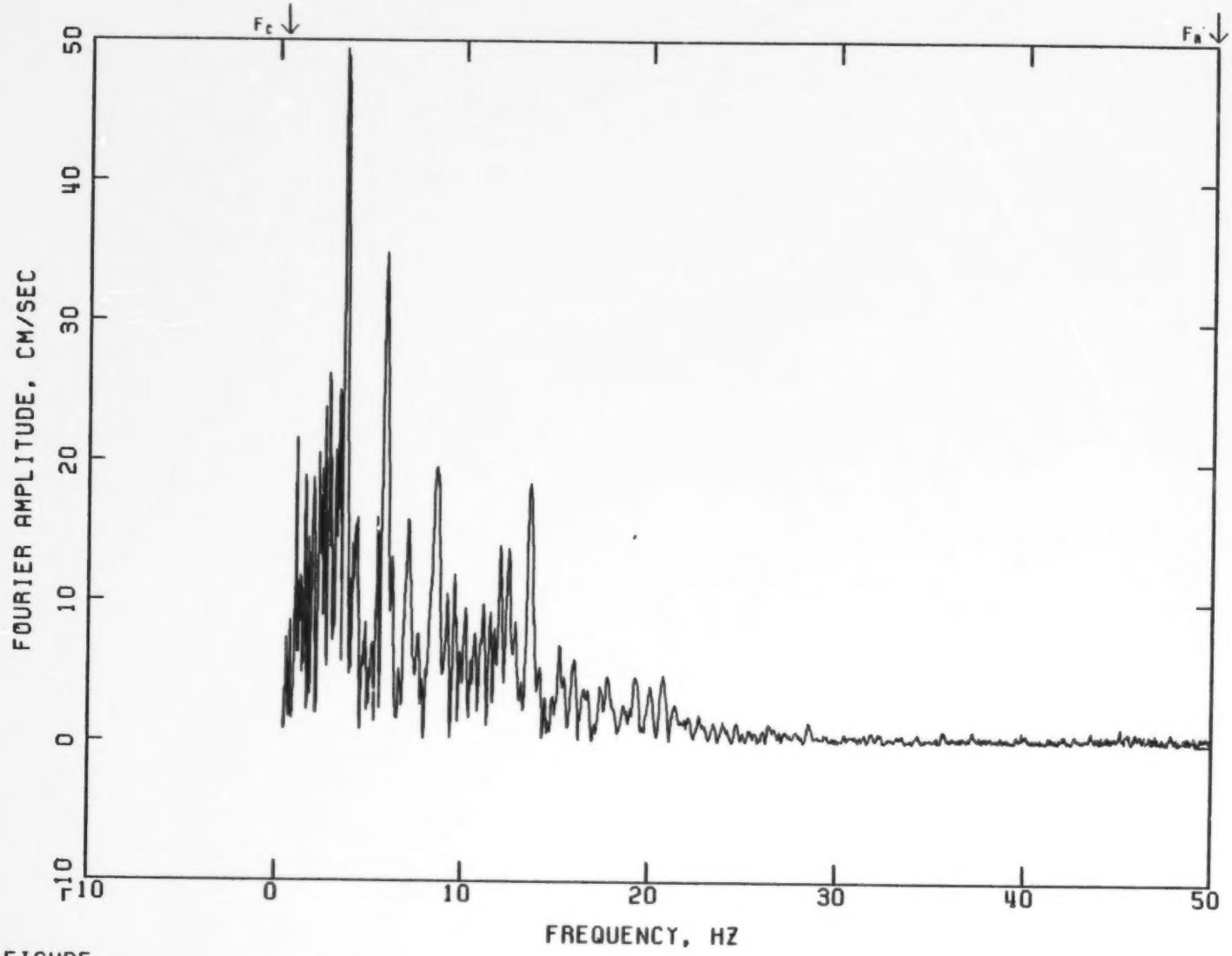
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, SKUNK HOLLOW
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



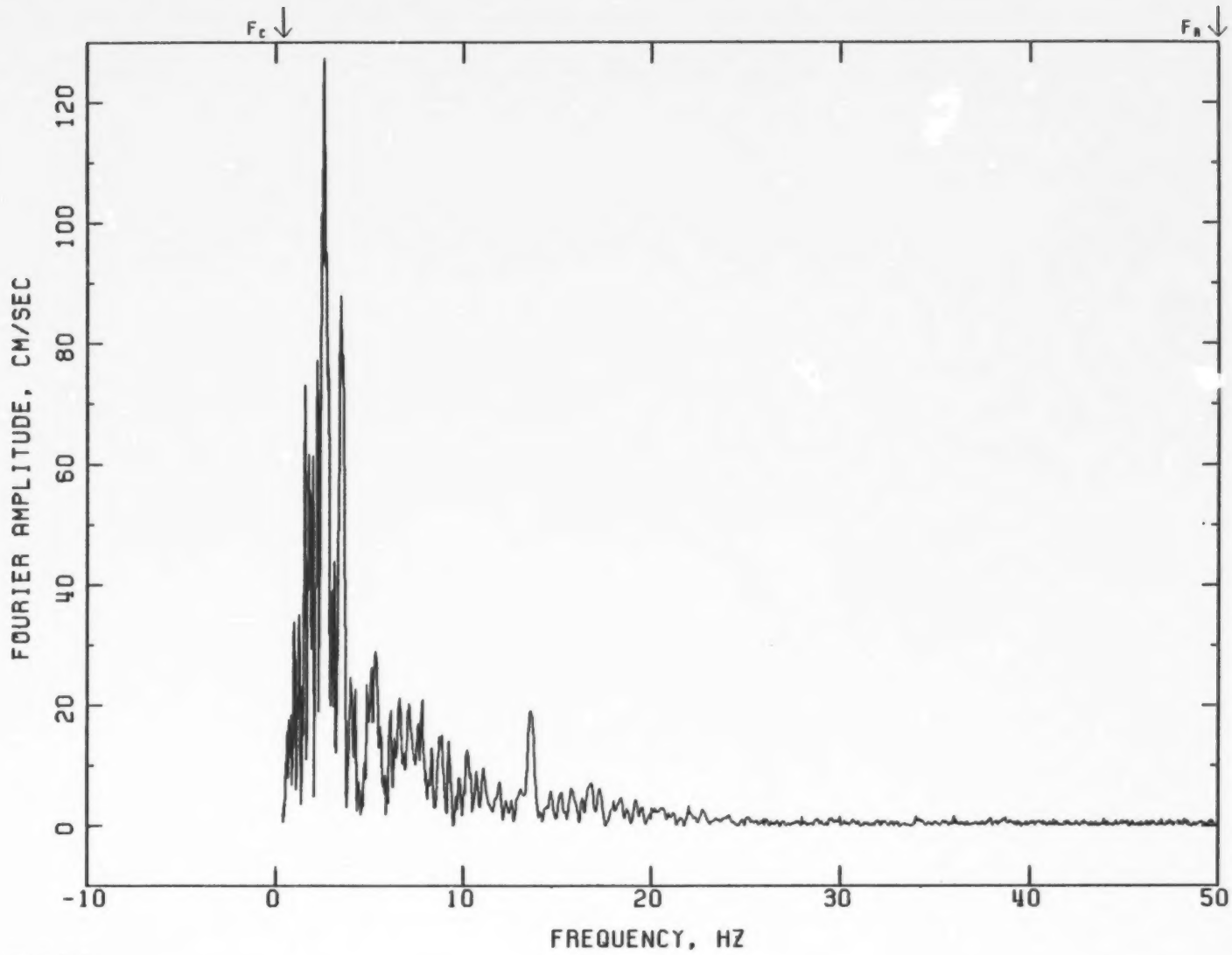
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, TRANSMITTER HILL (PAD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ..
COMPUTING OPTIONS= ZCROSS,NONOISE.



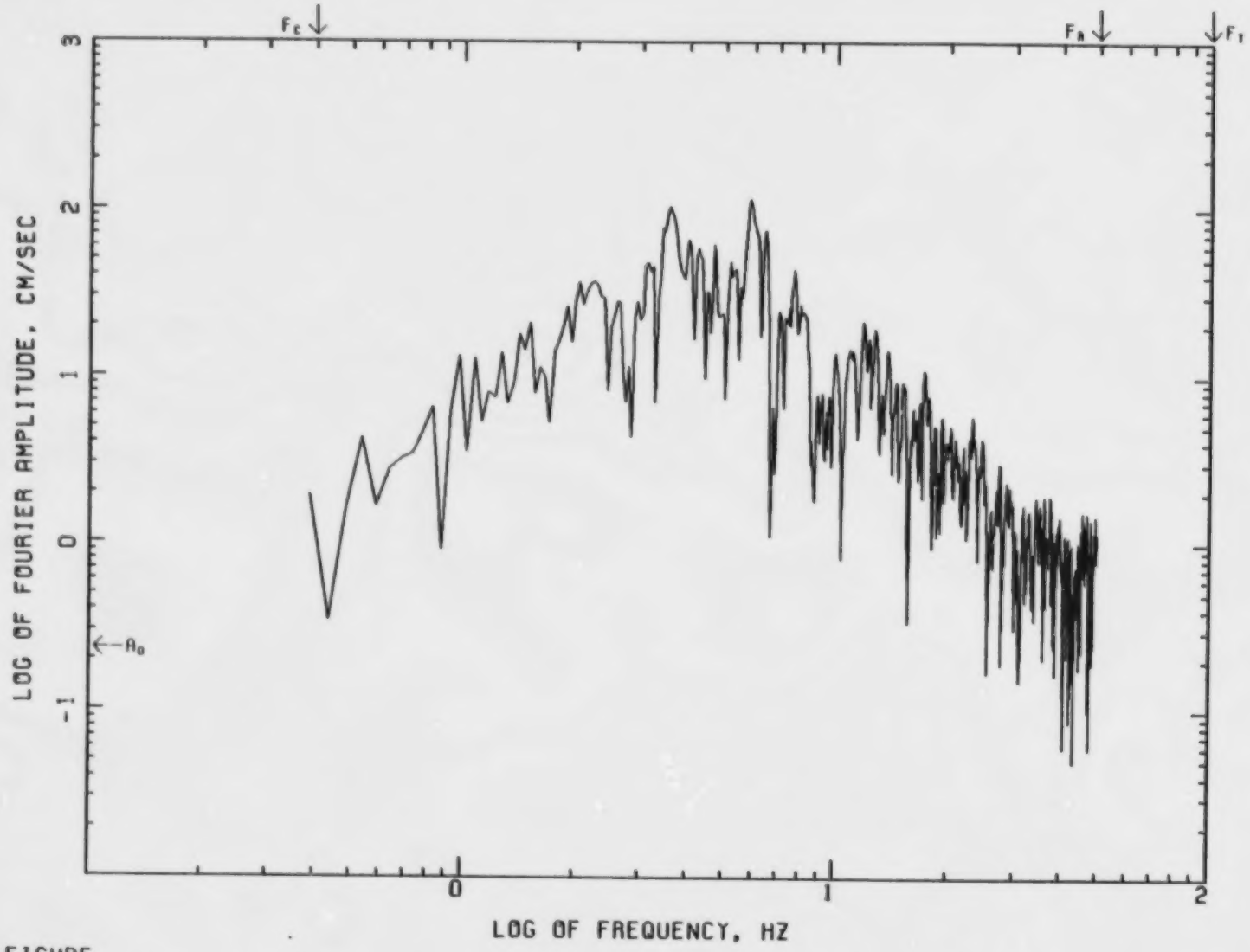
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, TRANSMITTER HILL (PAD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



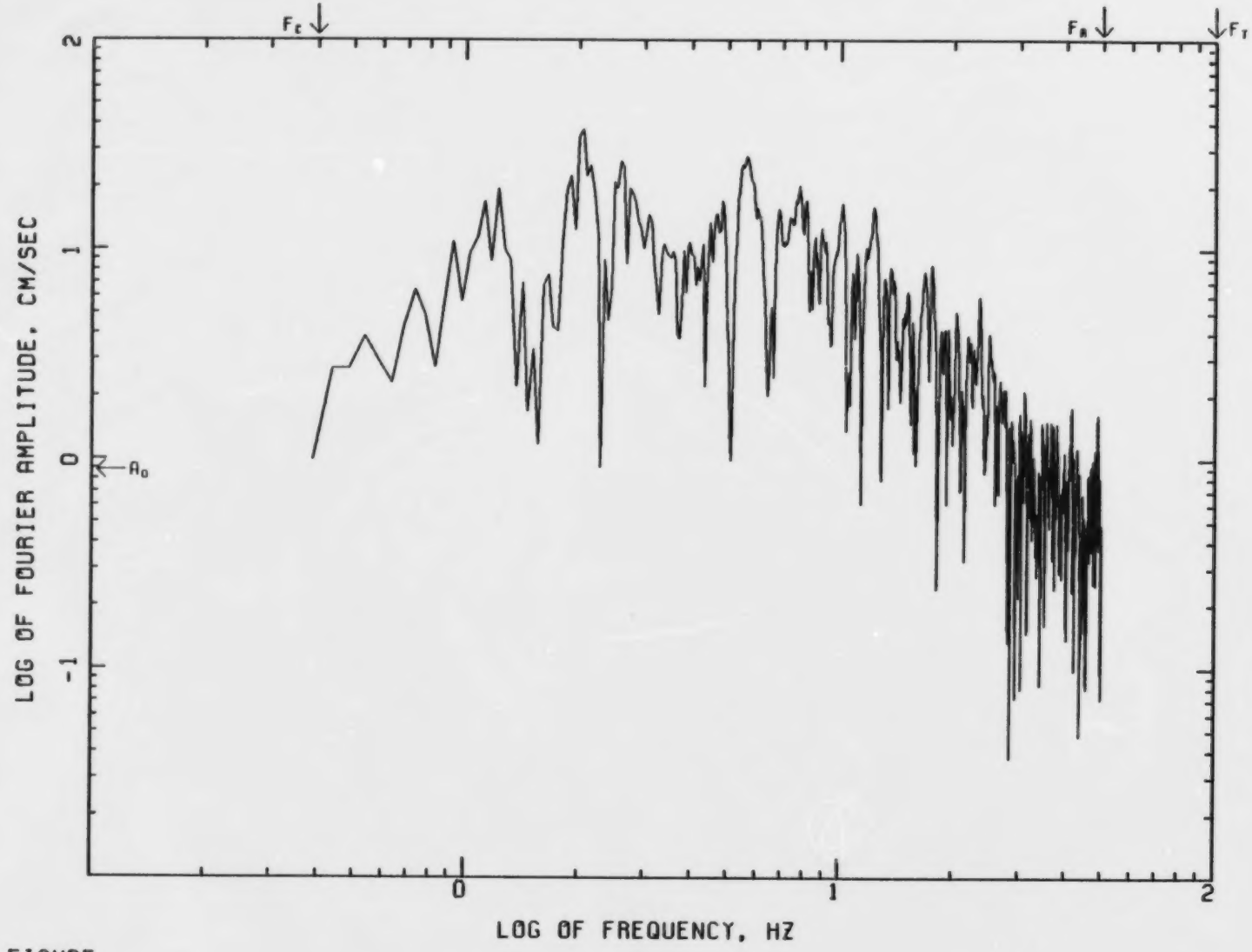
FIGURE

FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, TRANSMITTER HILL (PAD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



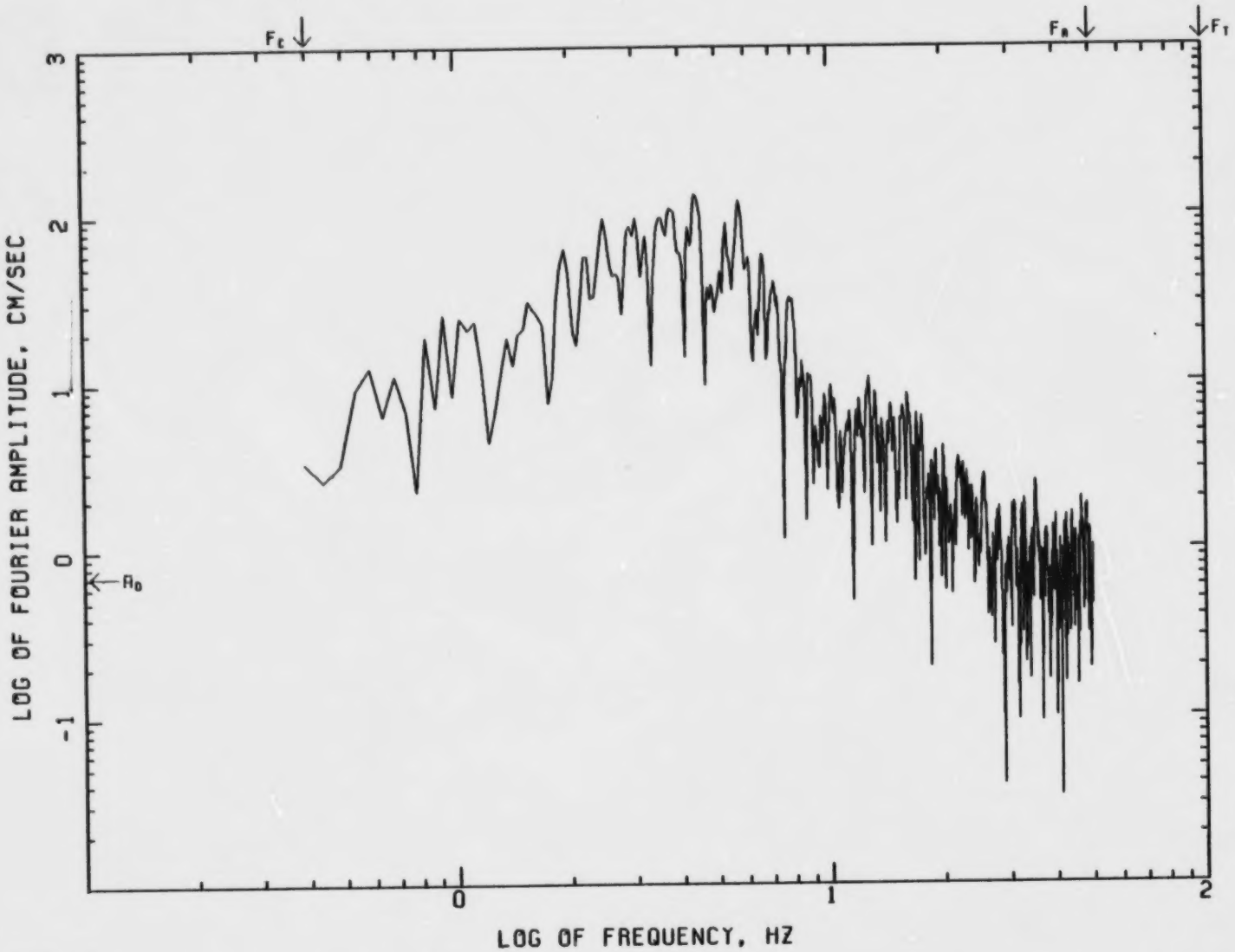
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (FREE FIELD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



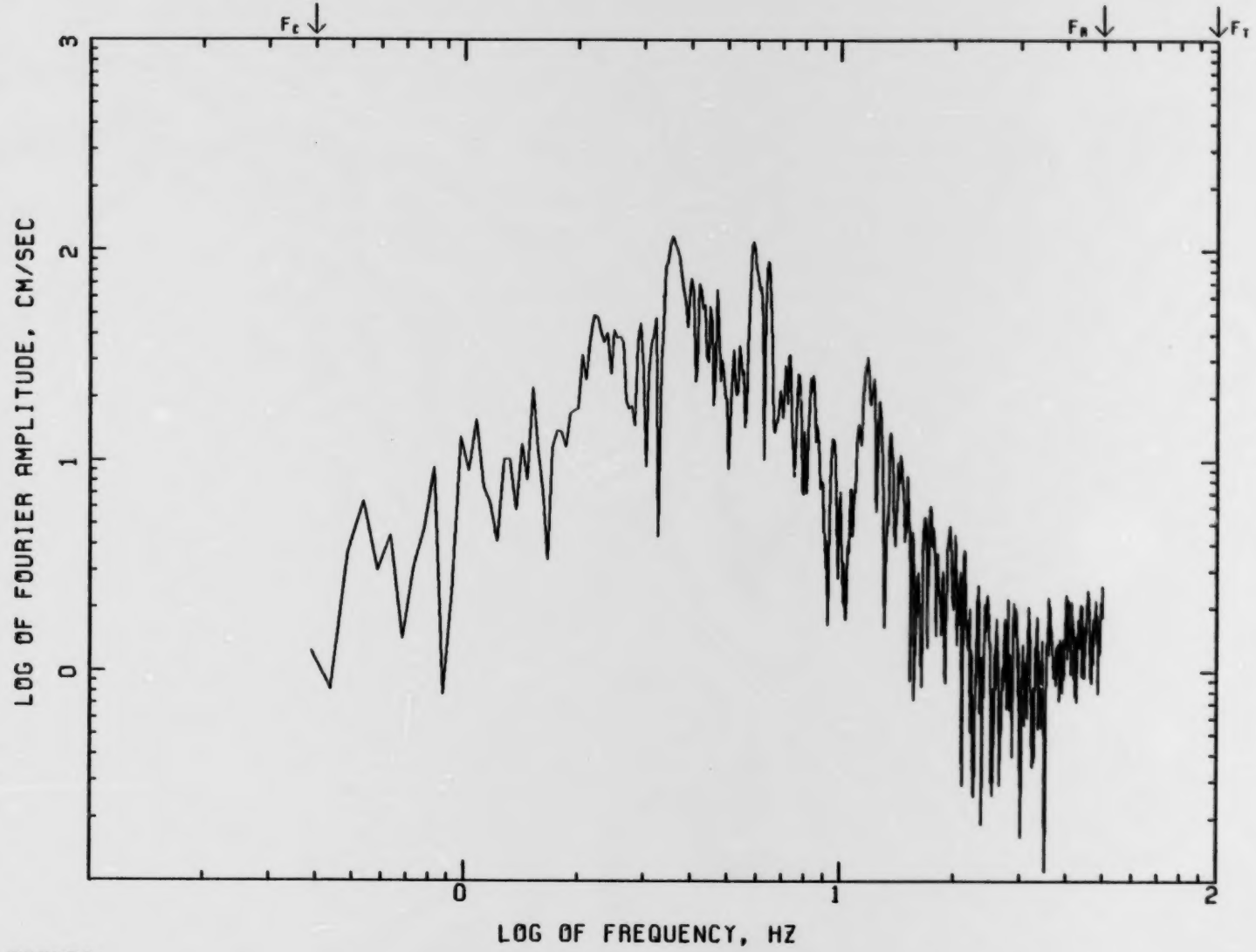
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (FREE FIELD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



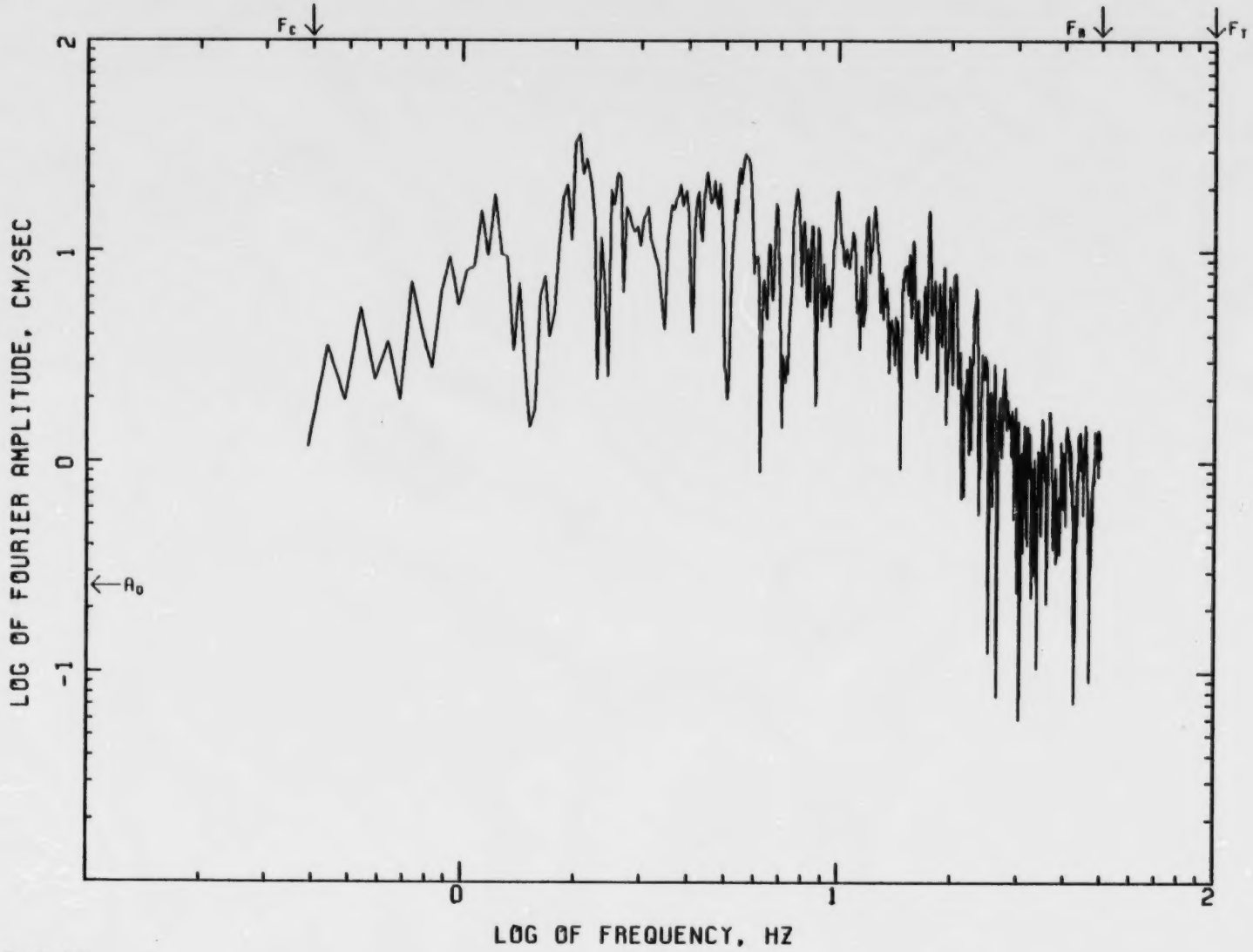
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (FREE FIELD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



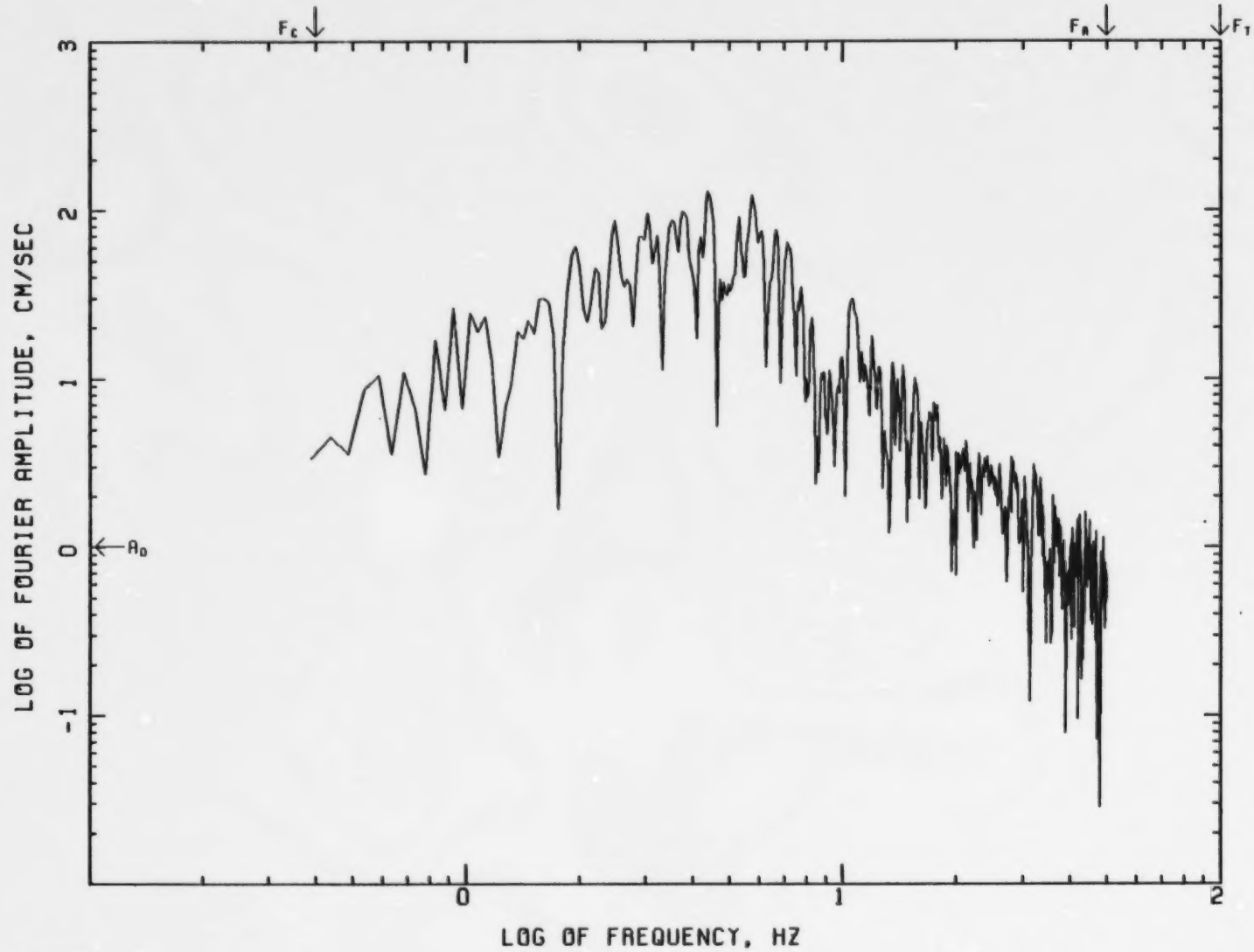
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (PAD SITE)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



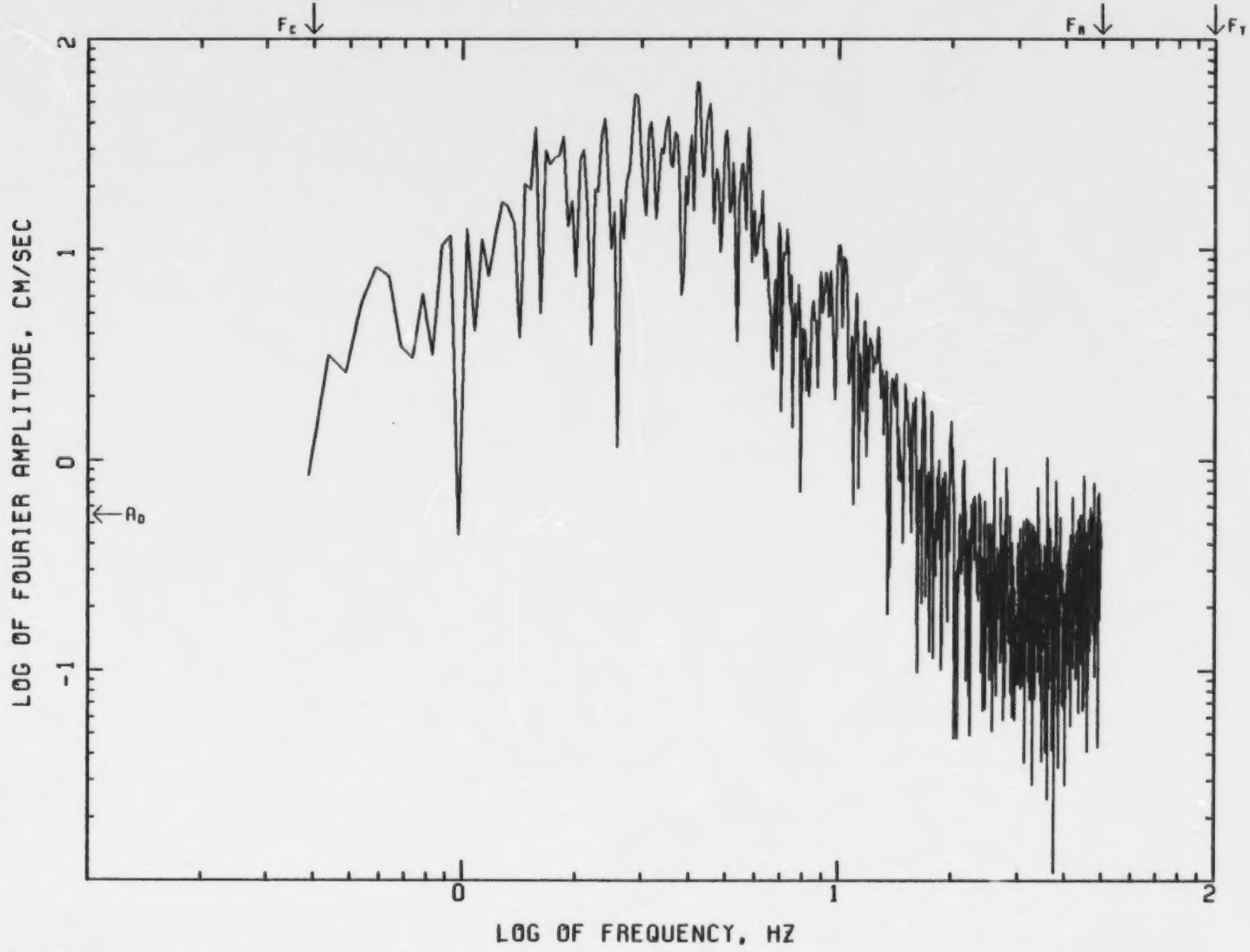
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (PAD SITE)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ. ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



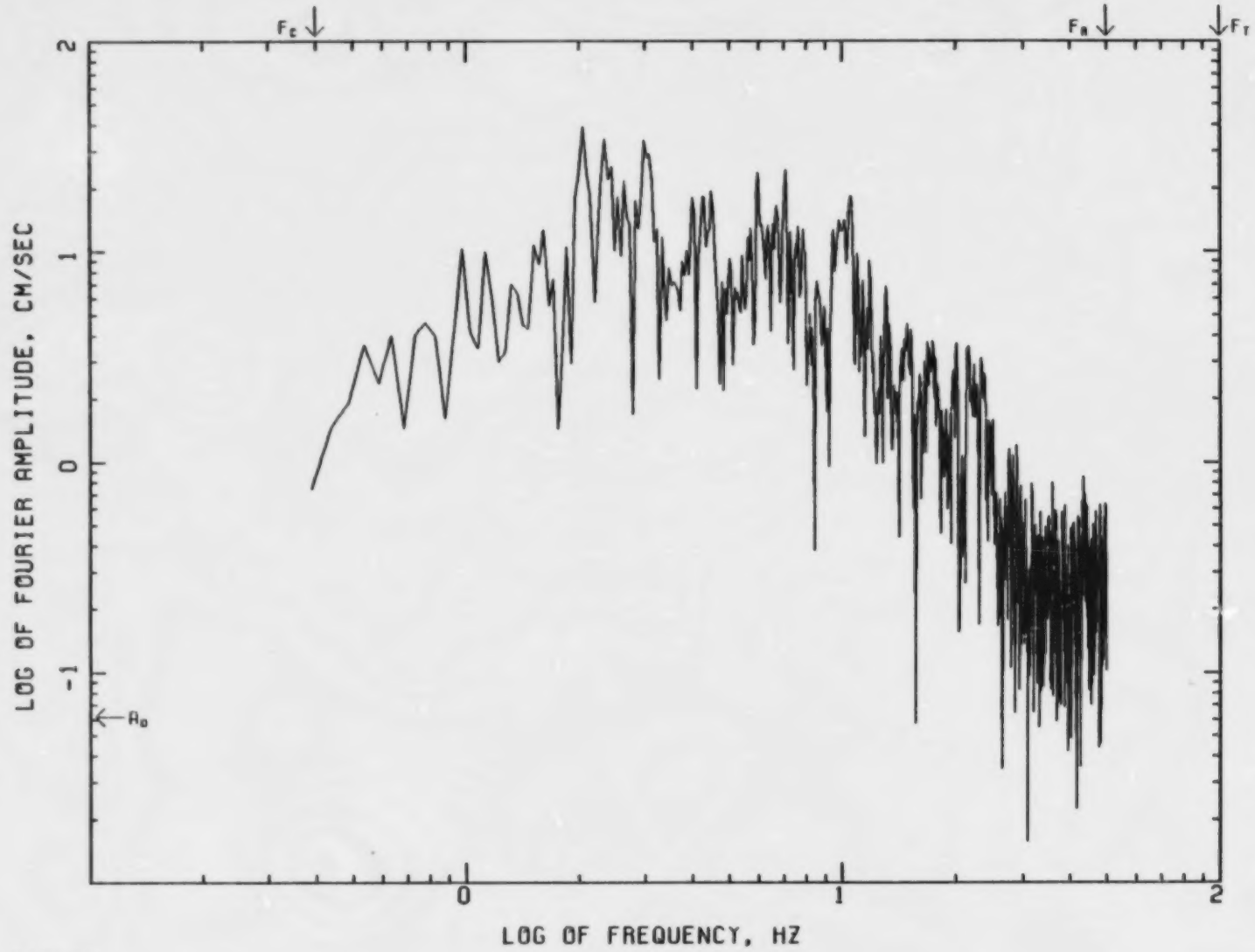
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, ANTICLINE RIDGE (PAD SITE)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



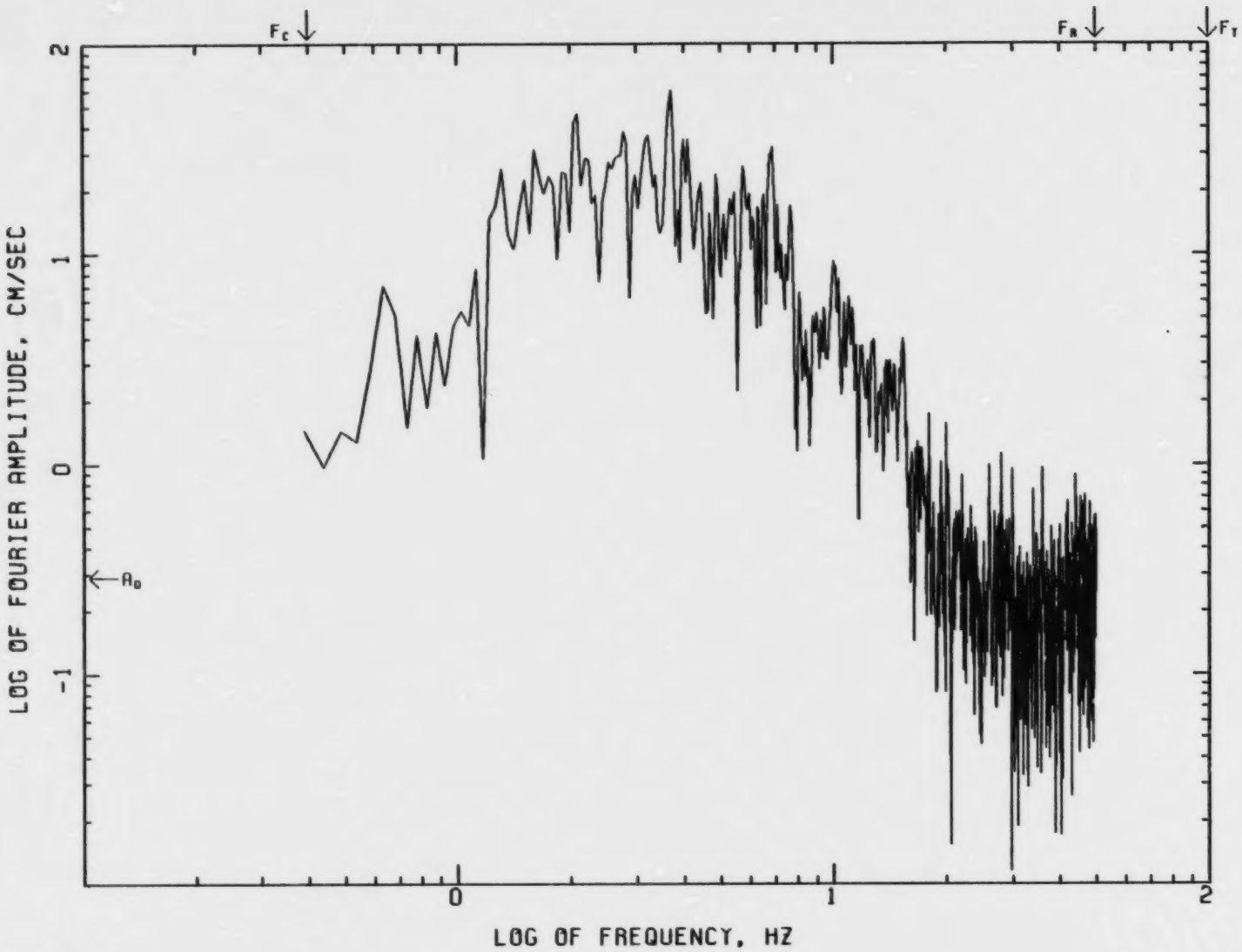
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, BURNETT CONSTRUCTION
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



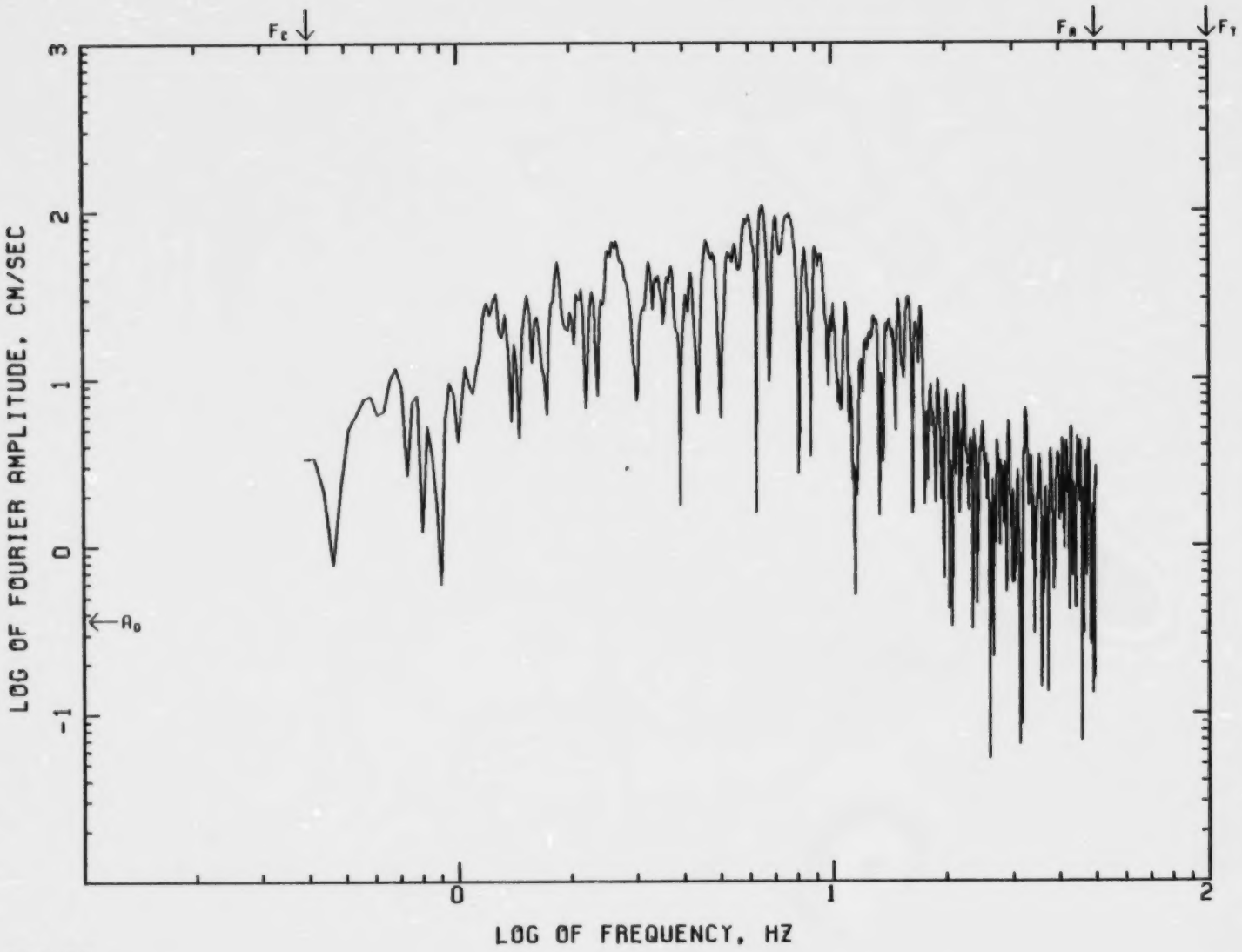
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, BURNETT CONSTRUCTION
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



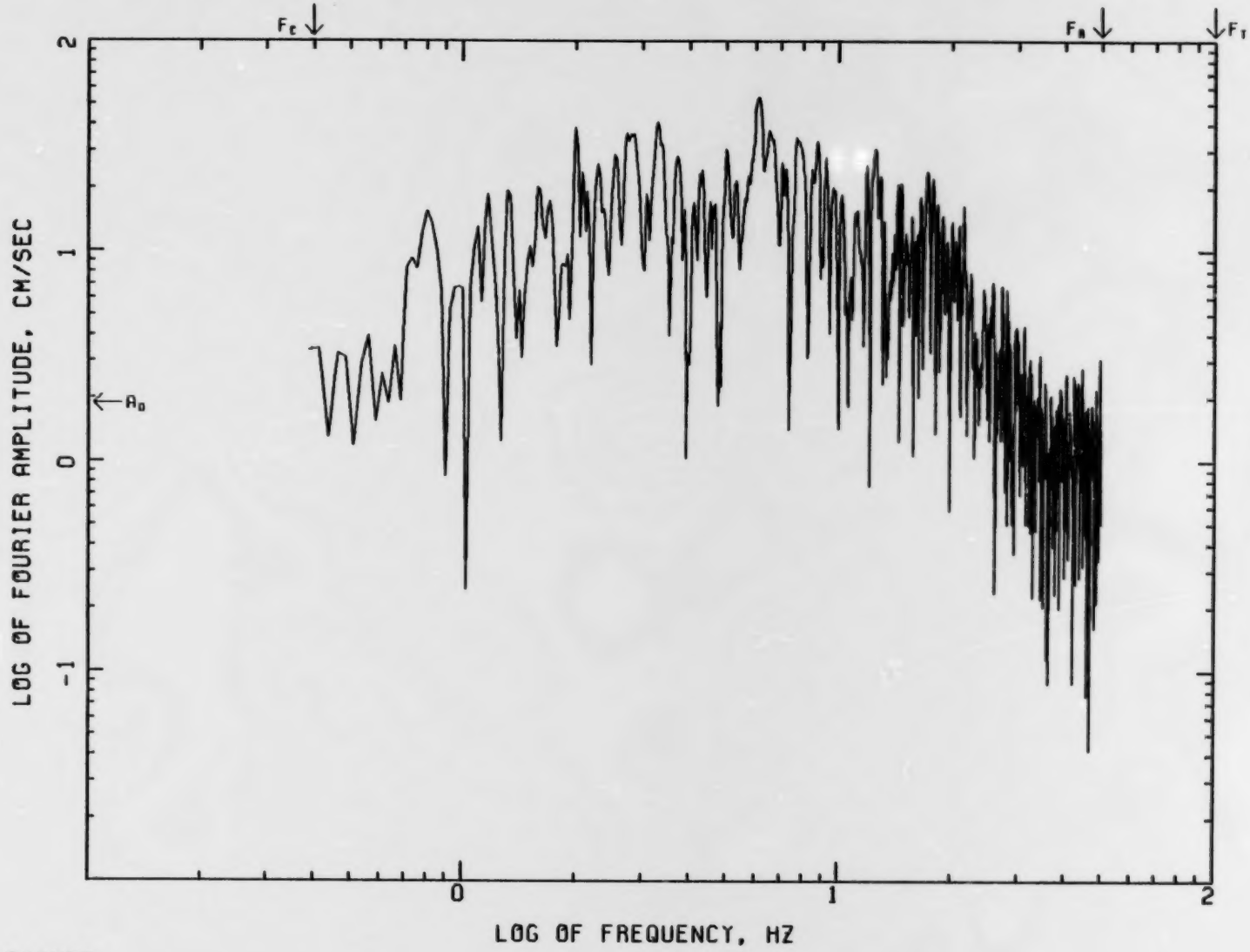
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, BURNETT CONSTRUCTION
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40 HZ, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



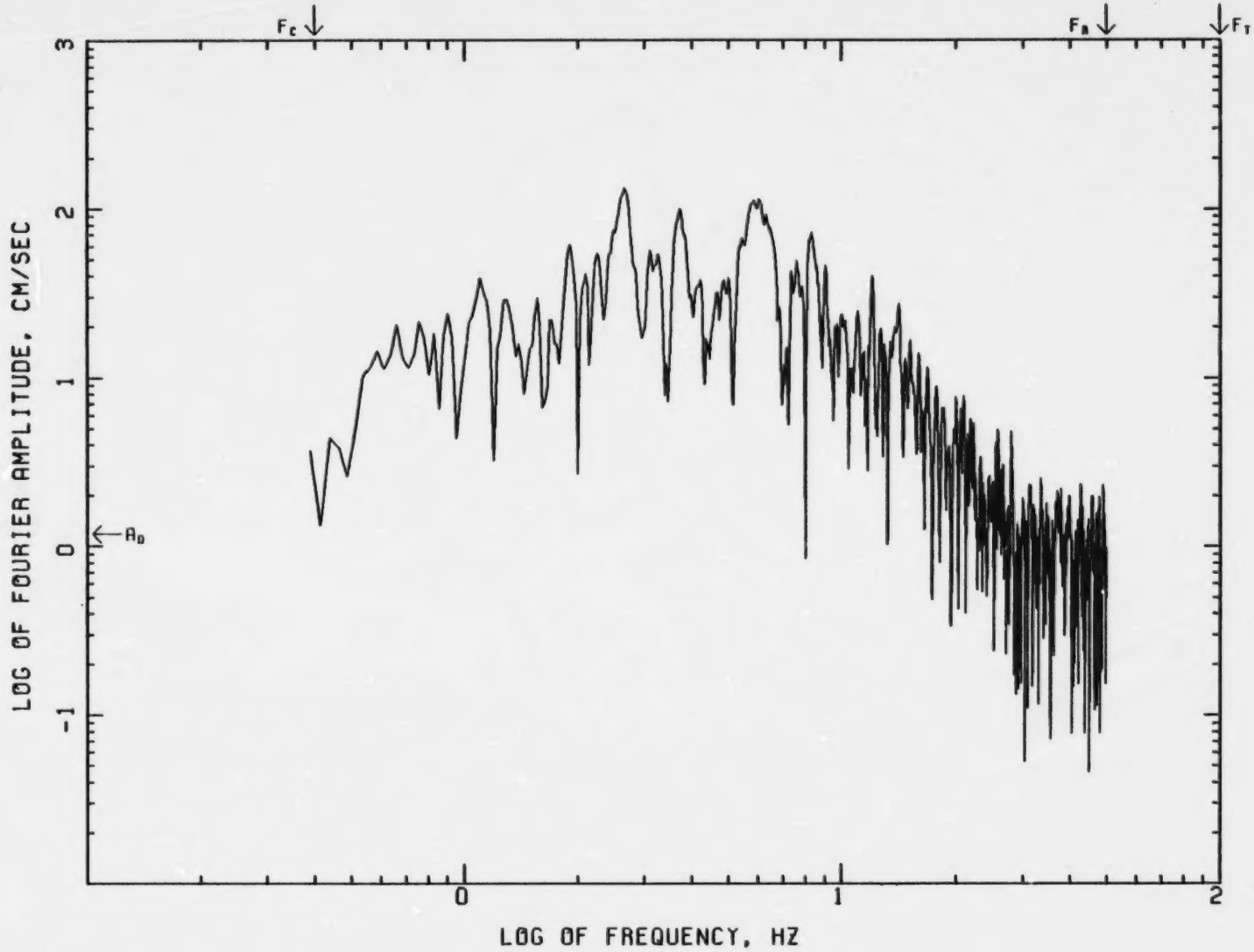
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL CITY
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



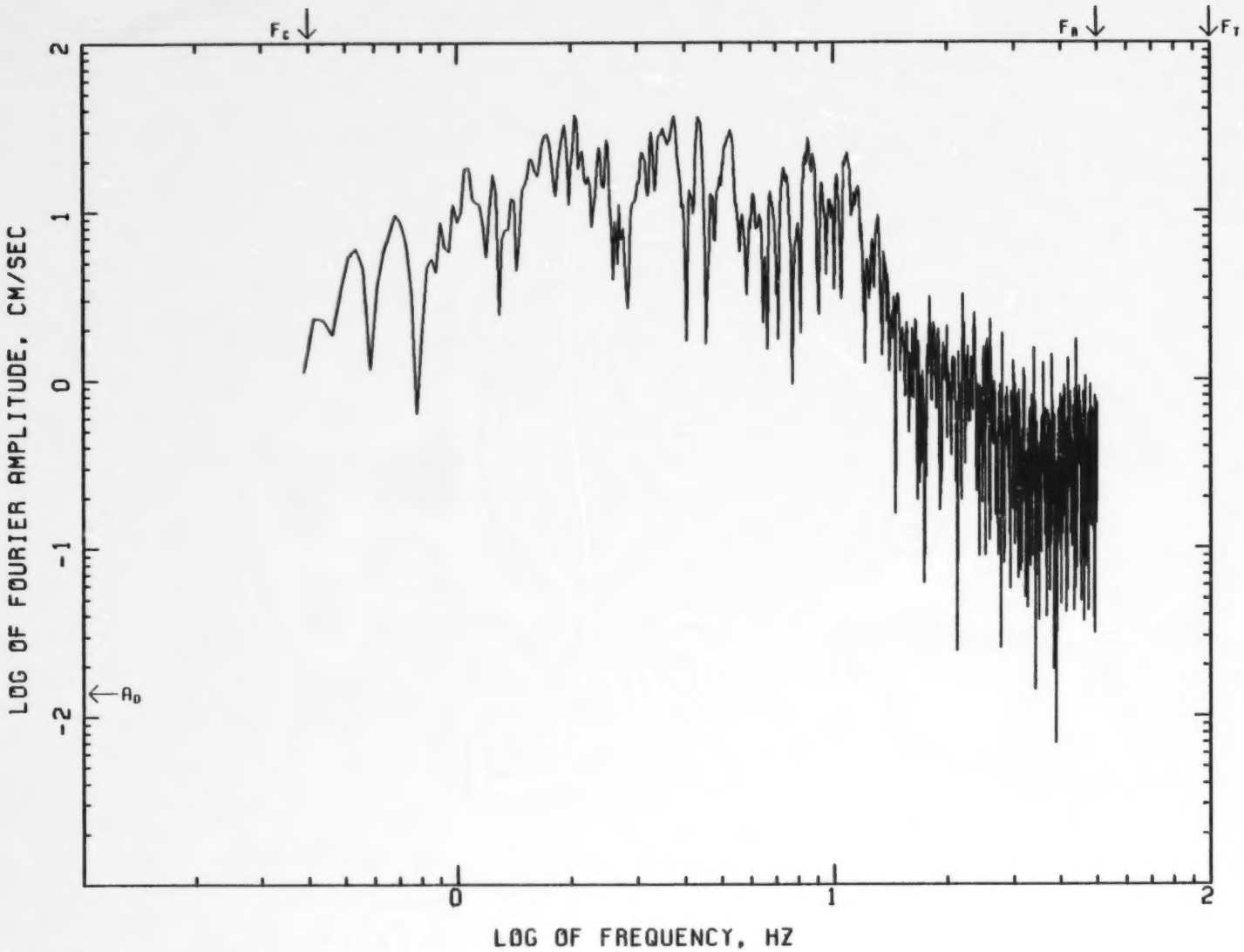
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL CITY
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



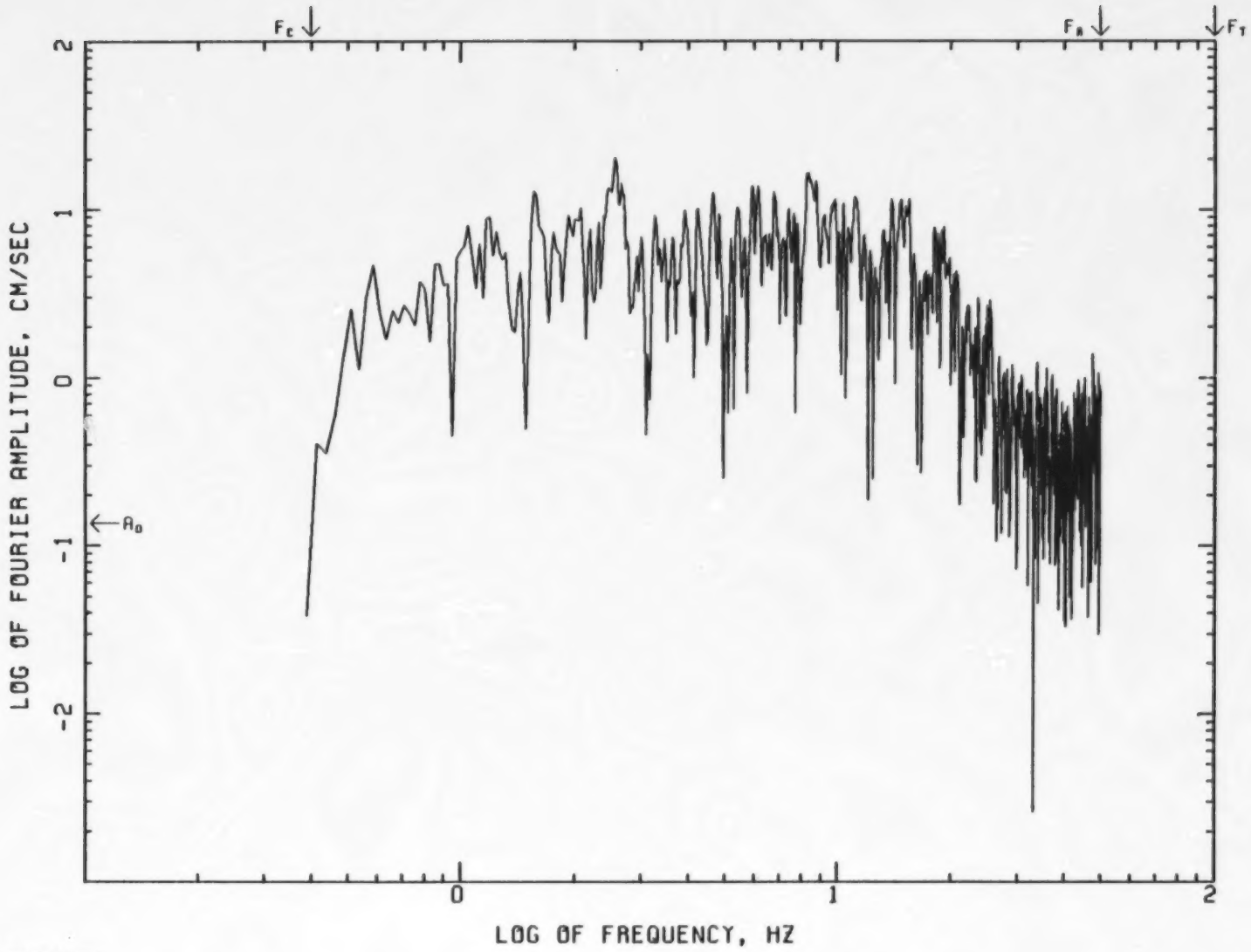
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL CITY
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



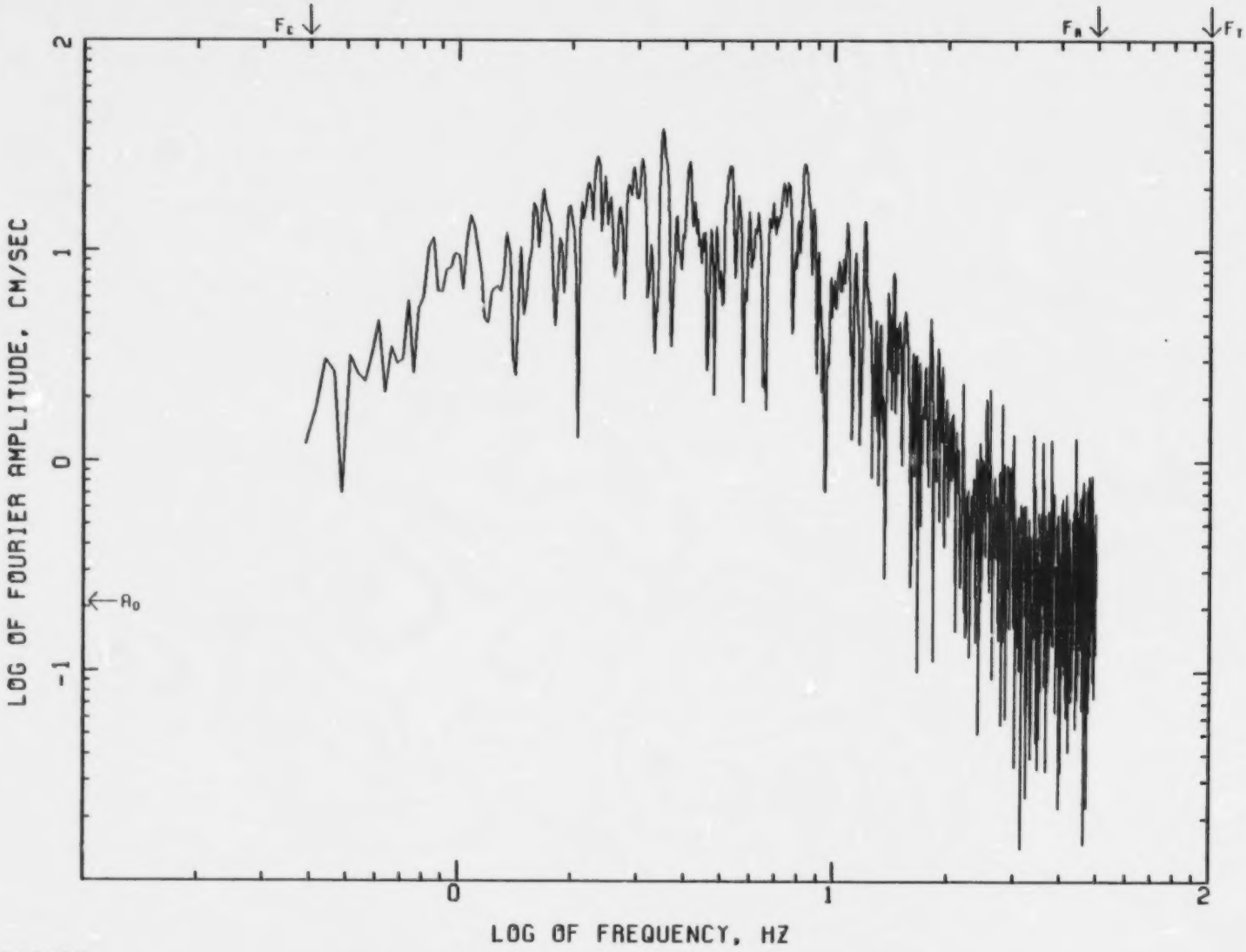
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



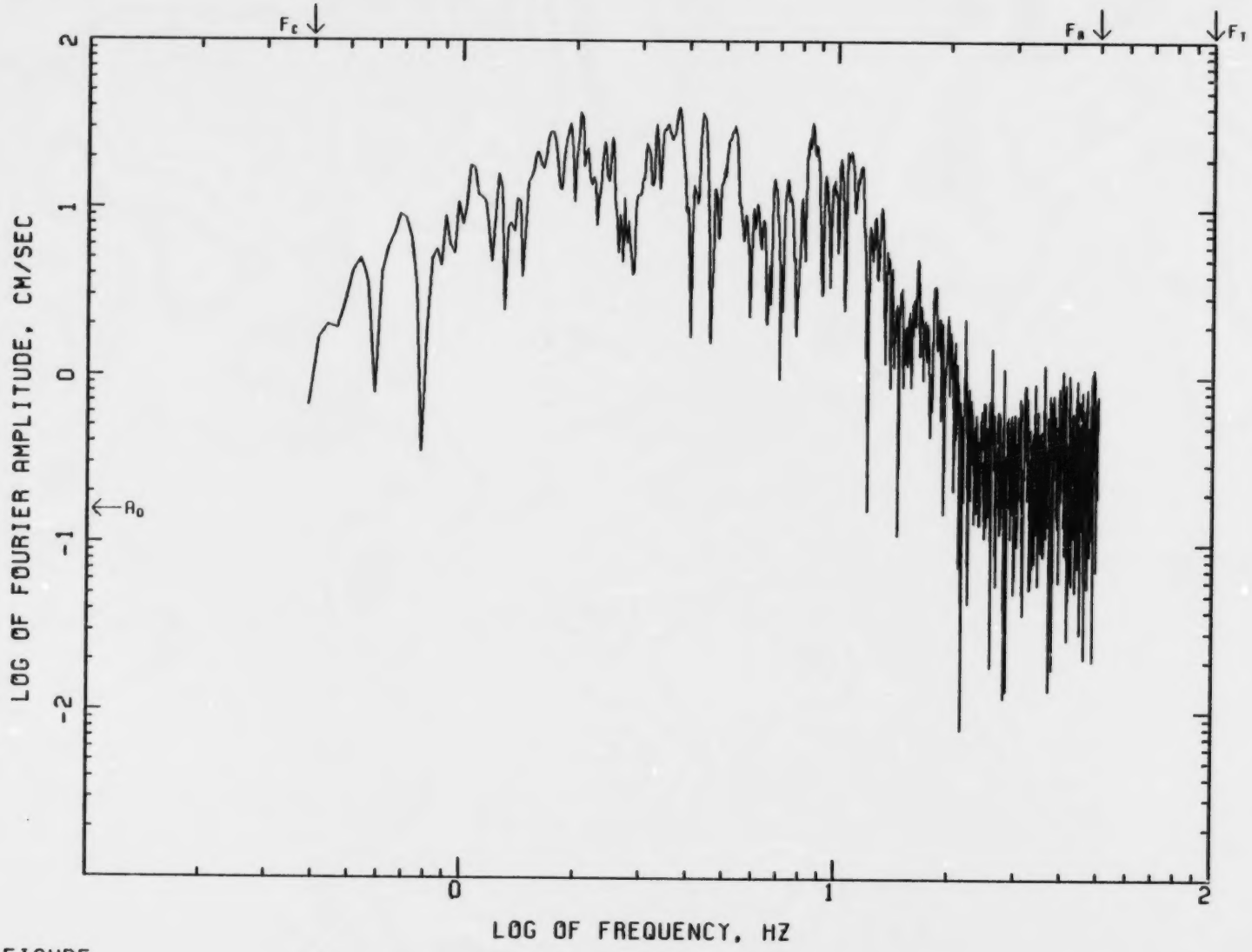
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



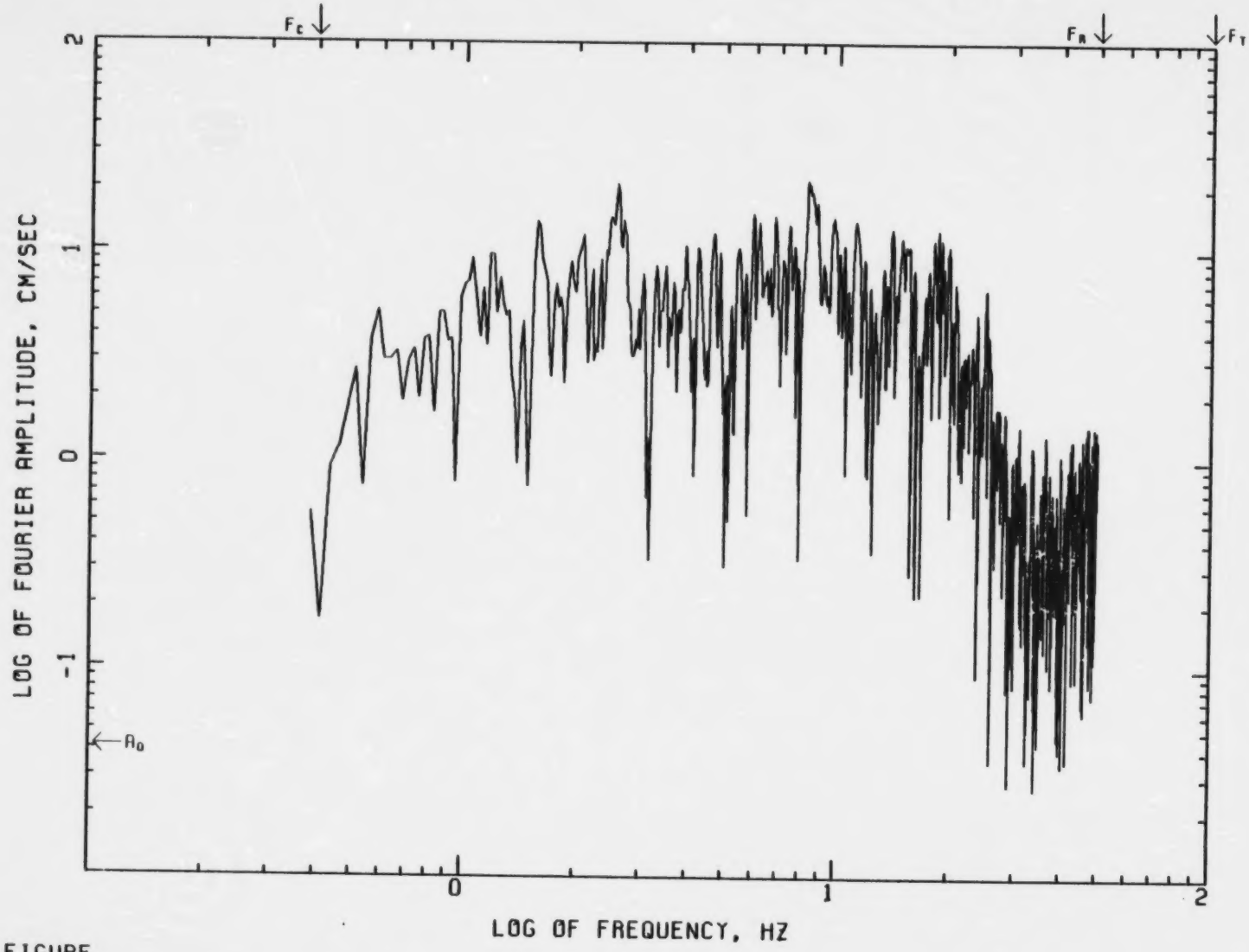
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (FREE-FIELD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



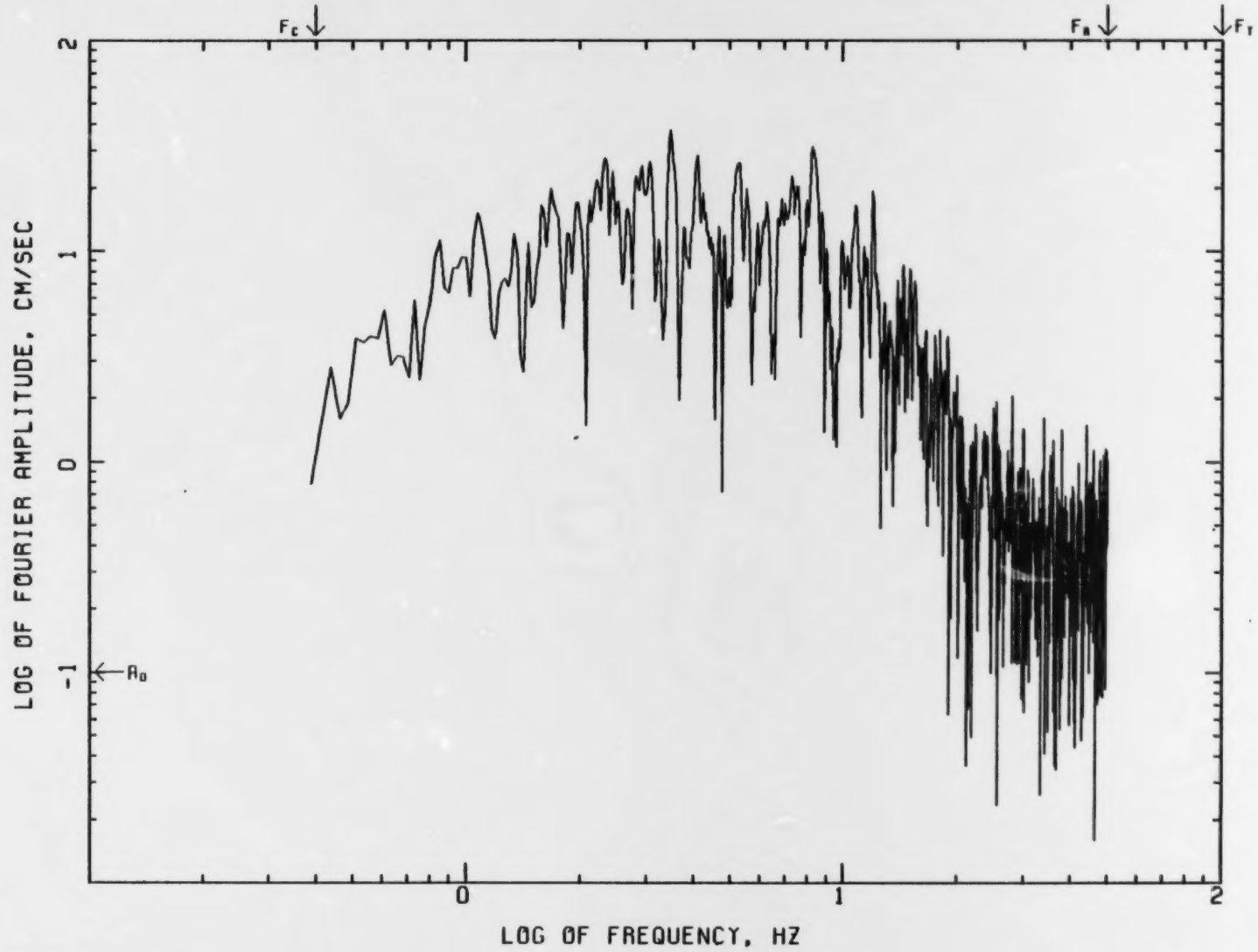
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (PAD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



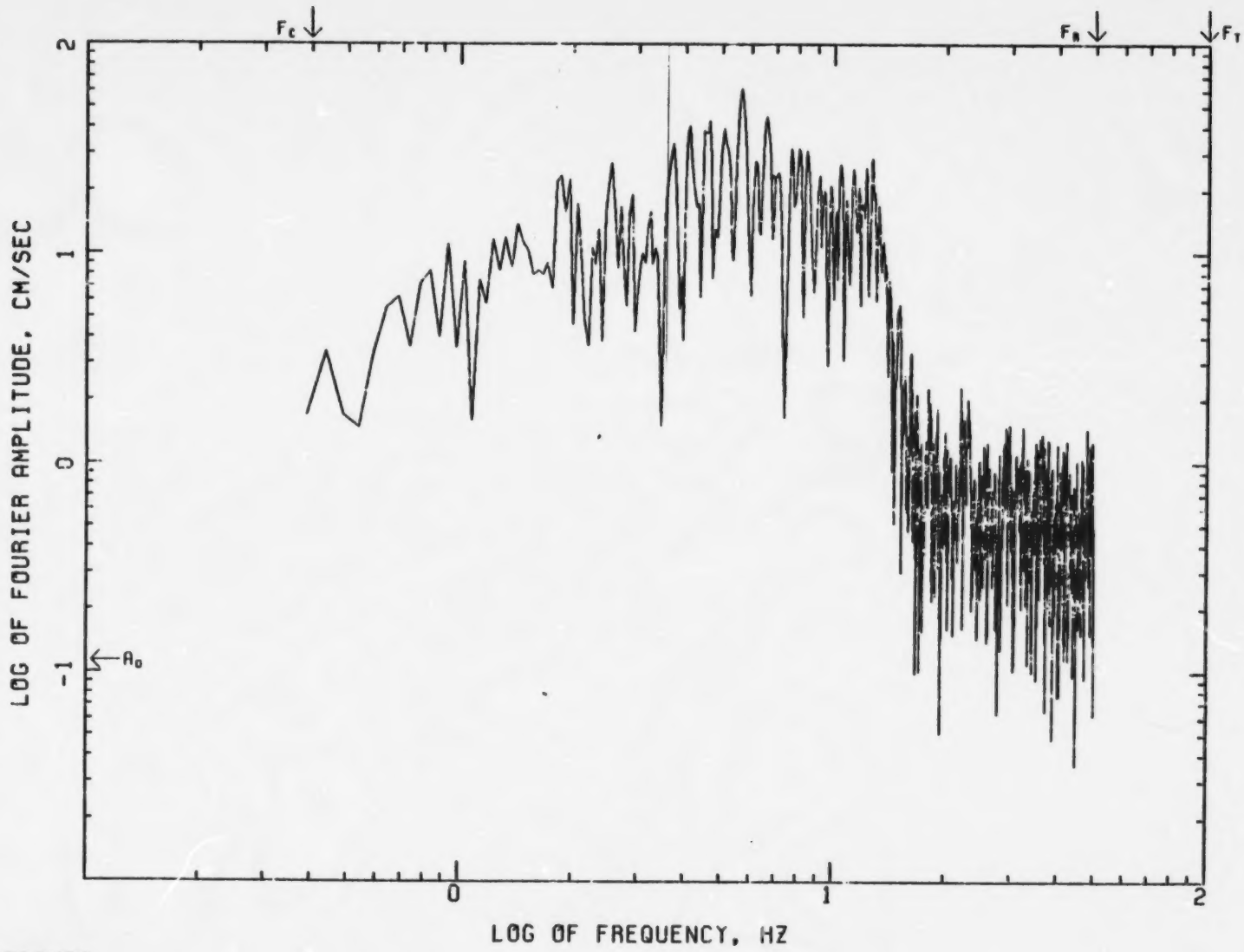
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (PAD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



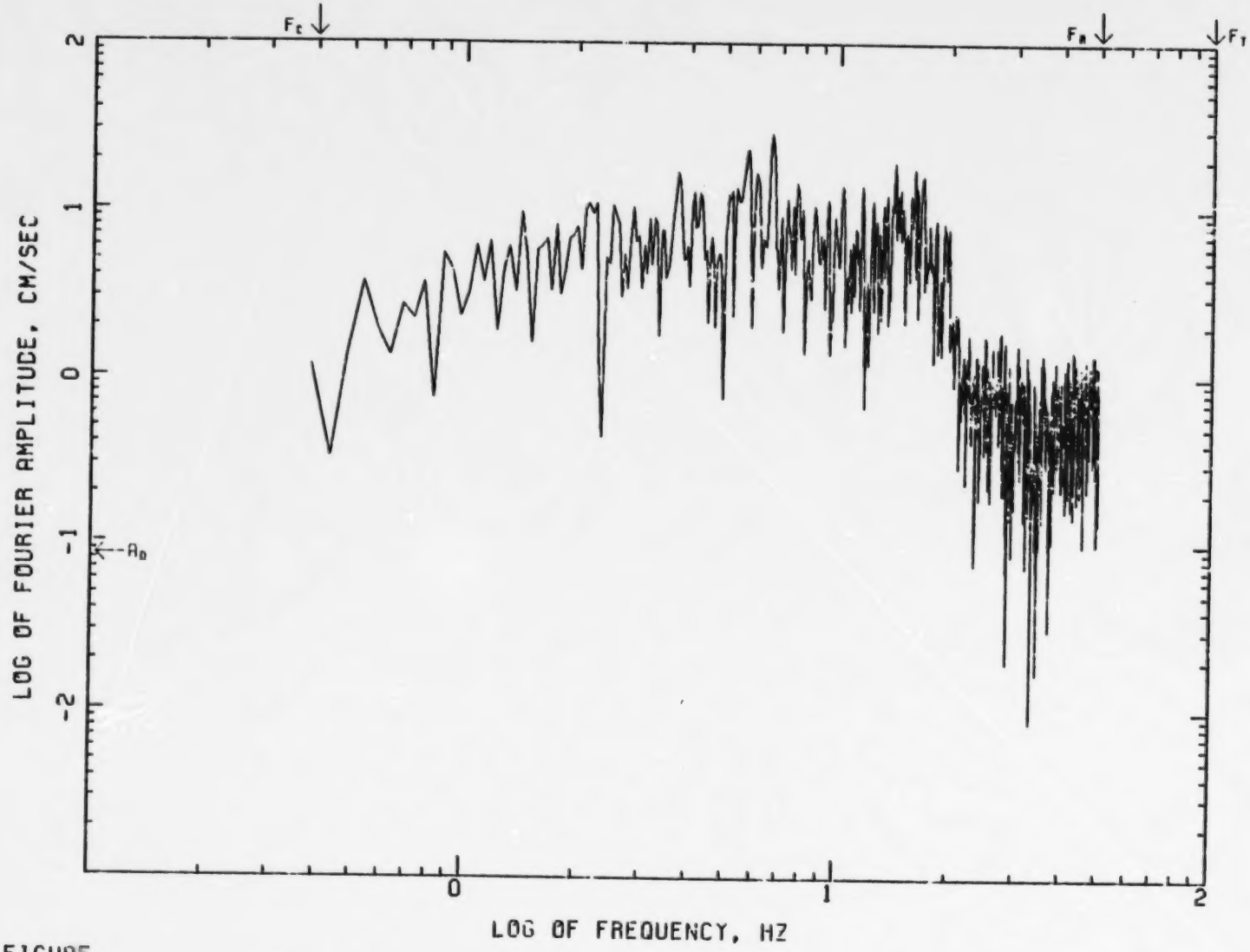
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, OIL FIELDS FIRE STATION (PAD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



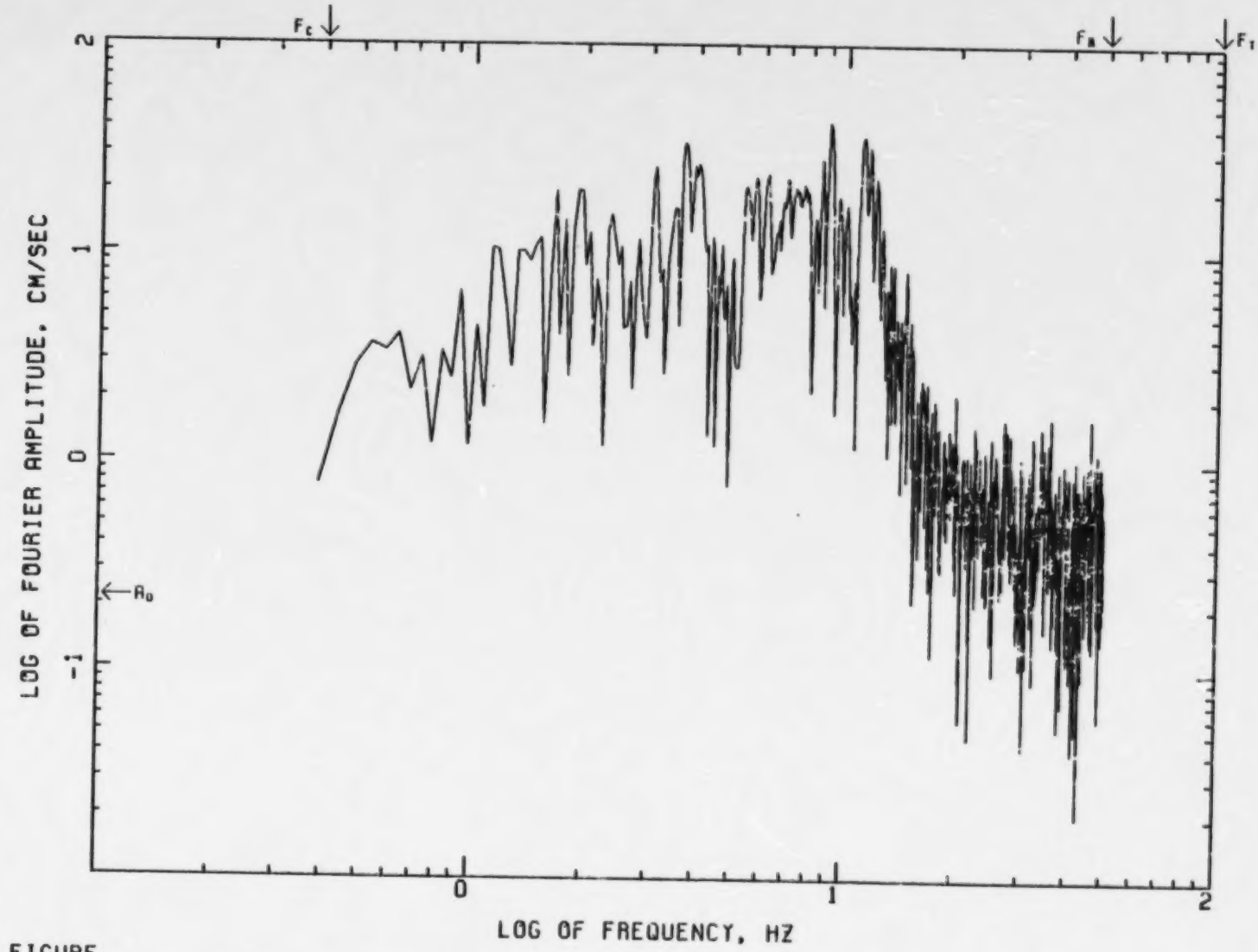
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, PALMER AVENUE
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



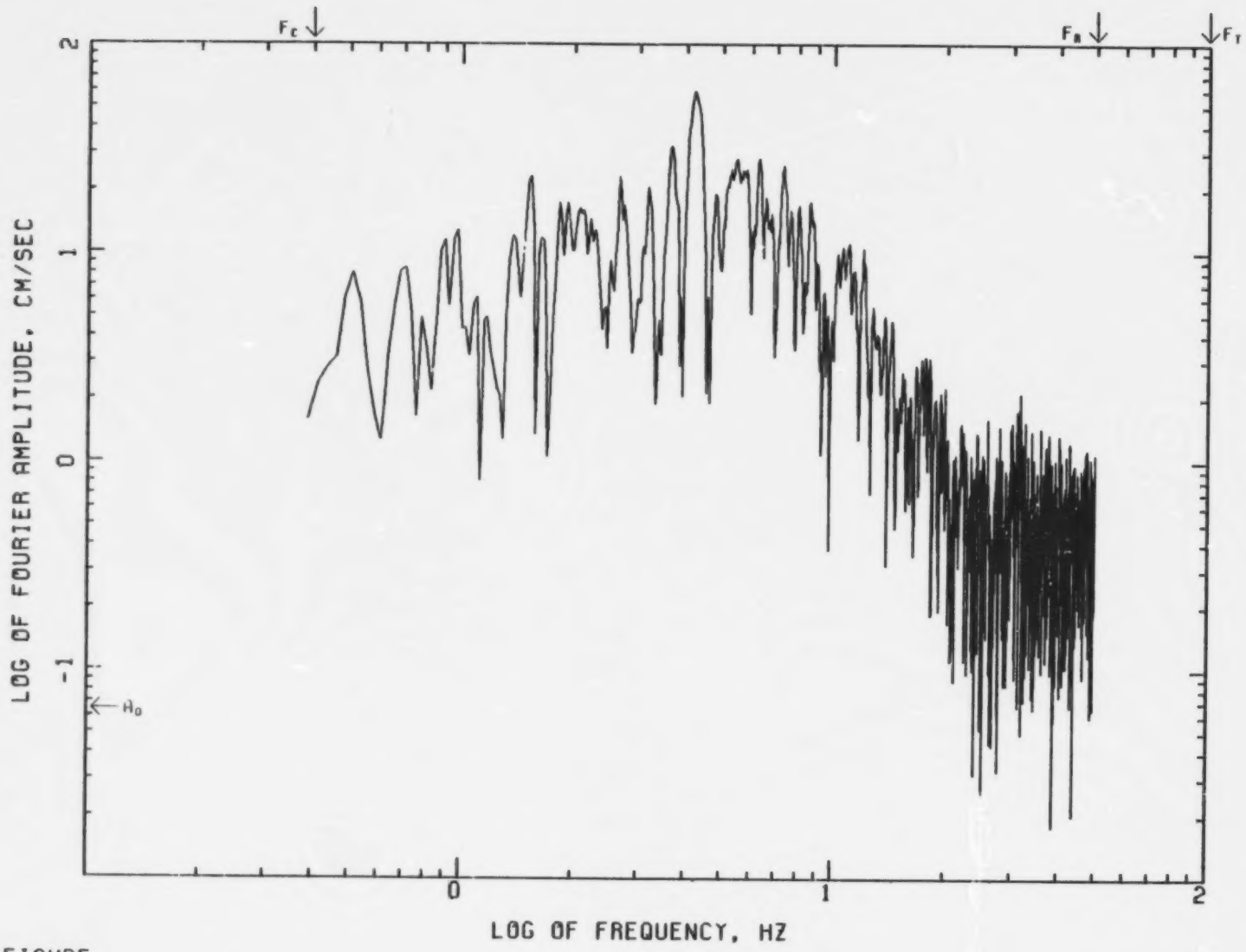
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, PALMER AVENUE
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



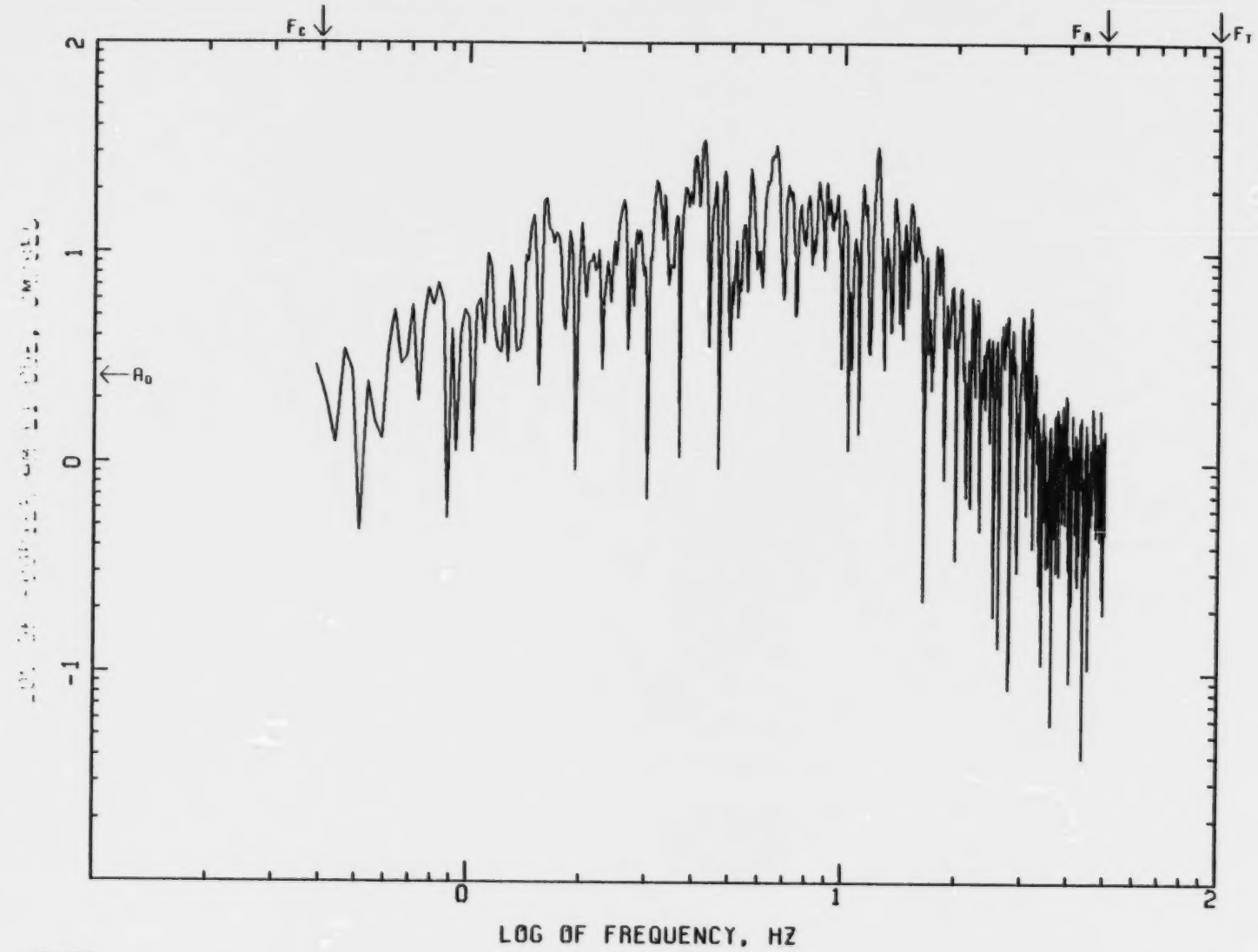
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, PALMER AVENUE
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



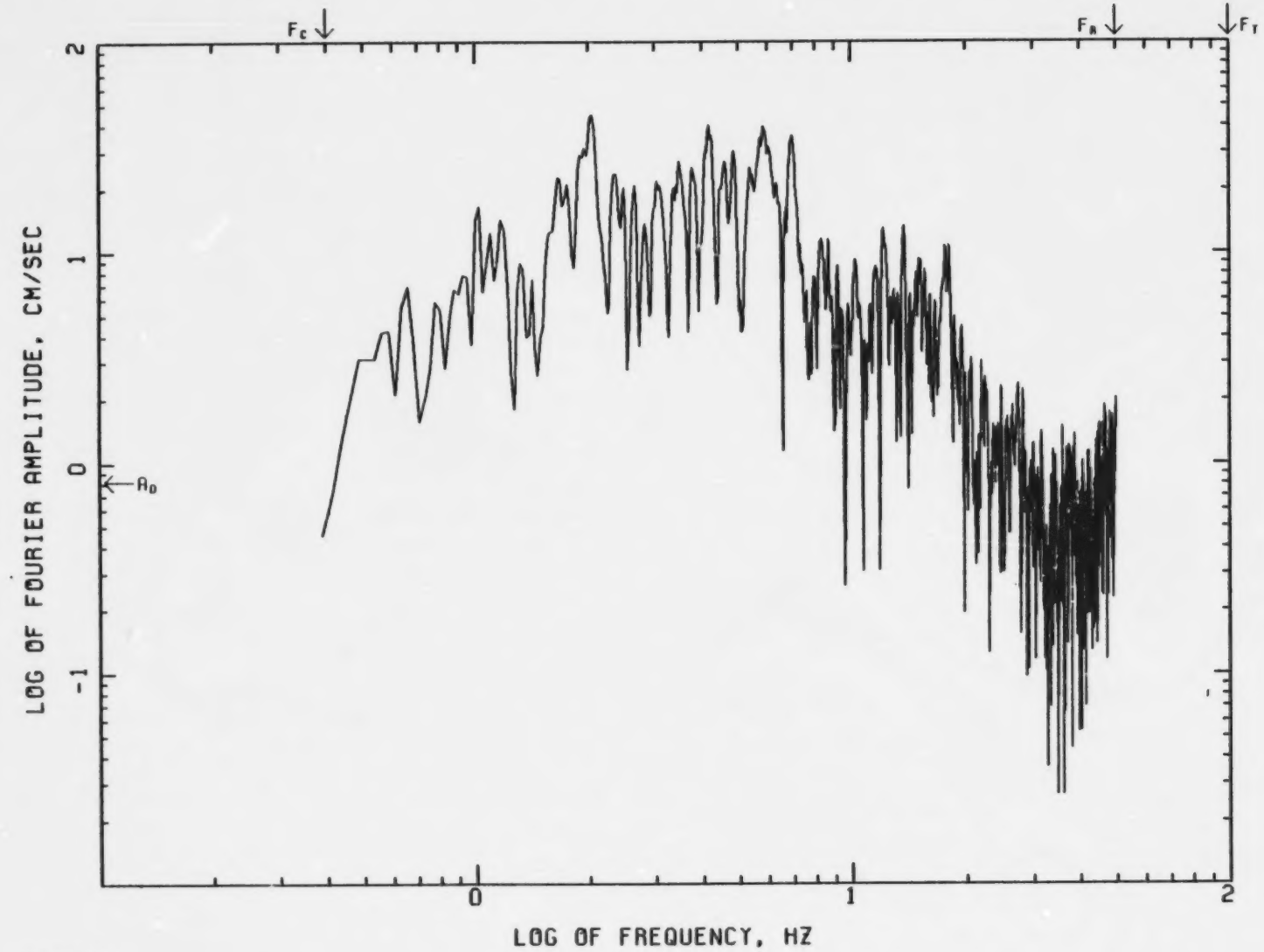
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, SKUNK HOLLOW
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



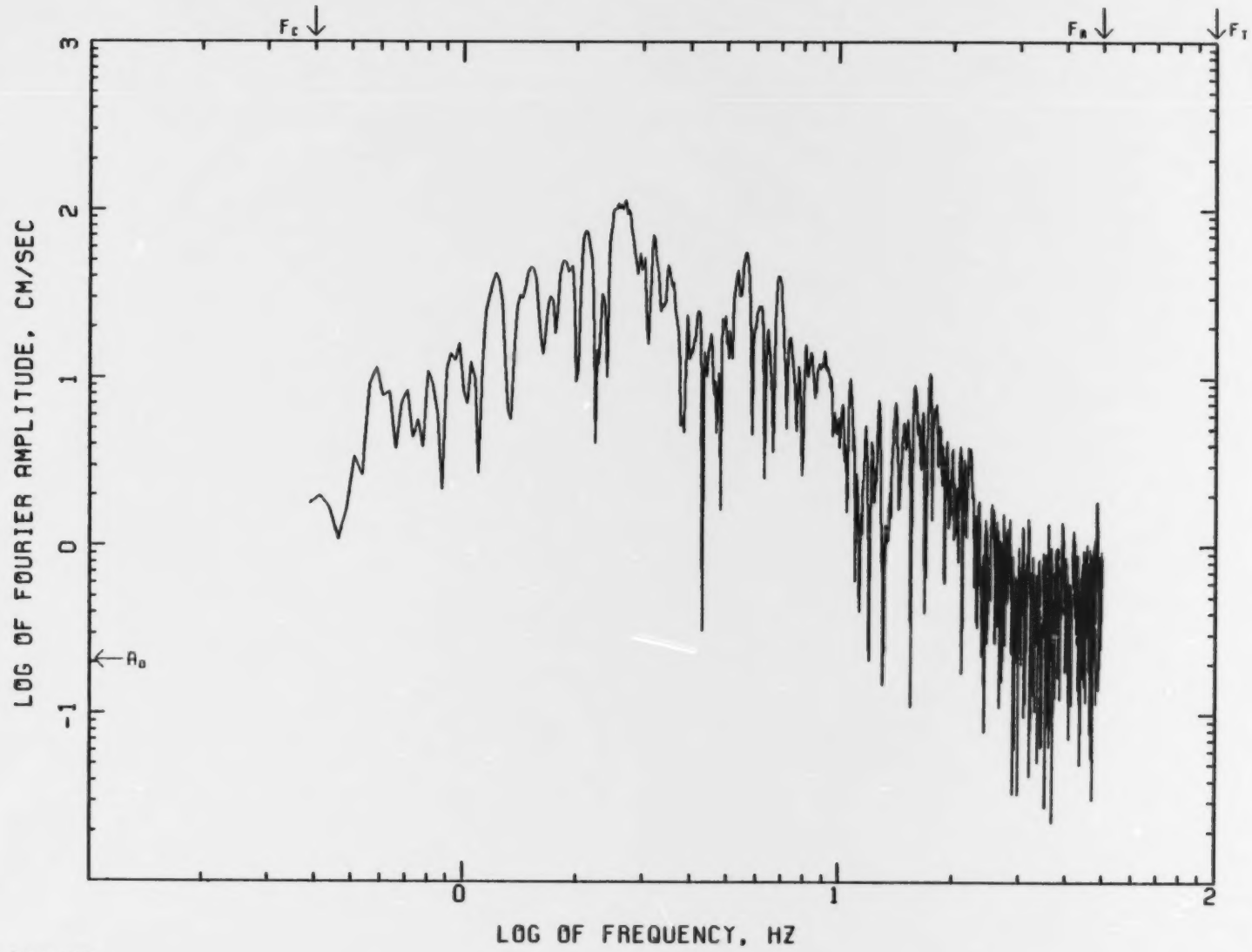
IGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, SKUNK HOLLOW
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



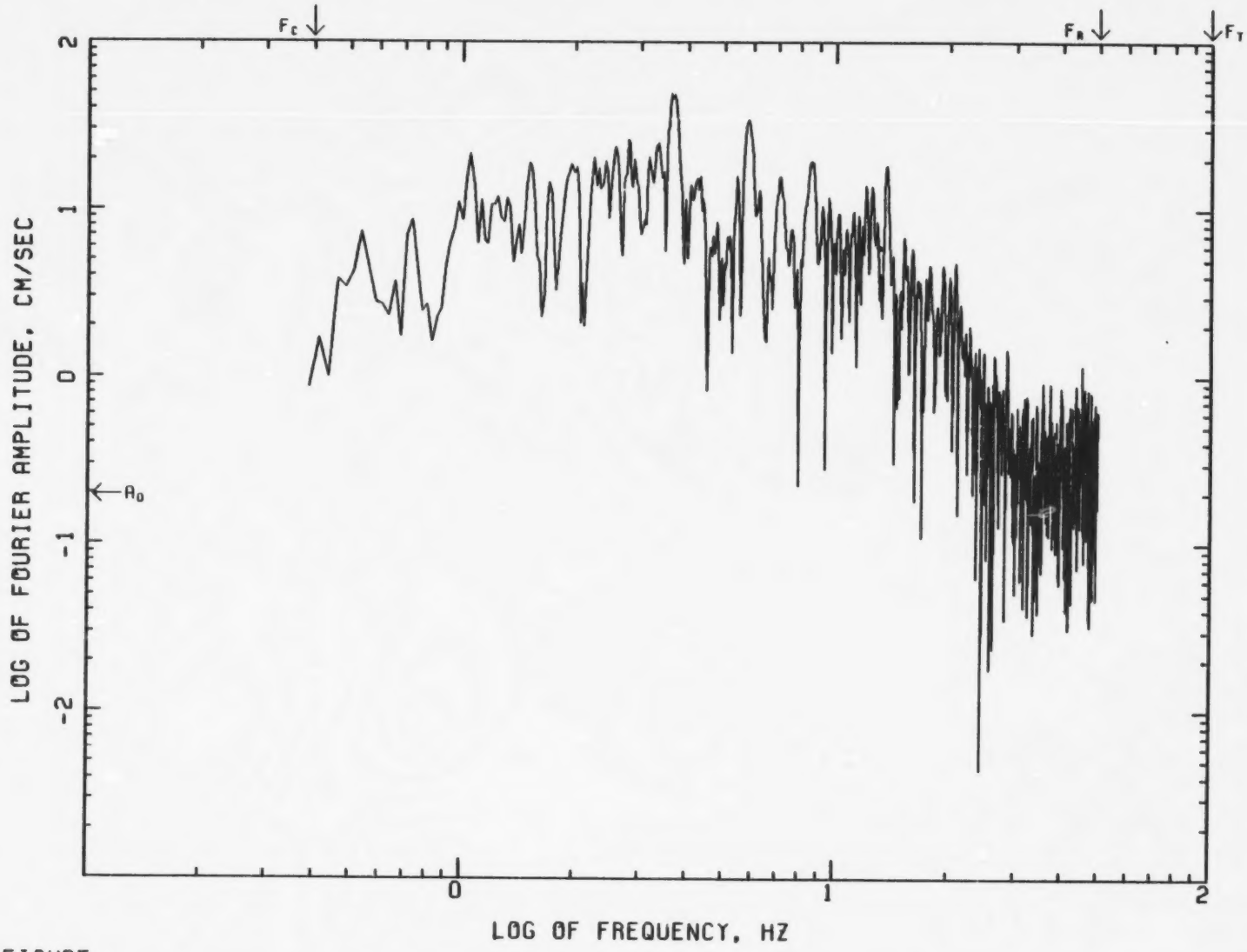
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, SKUNK HOLLOW
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ..
COMPUTING OPTIONS= ZCROSS,NONOISE.



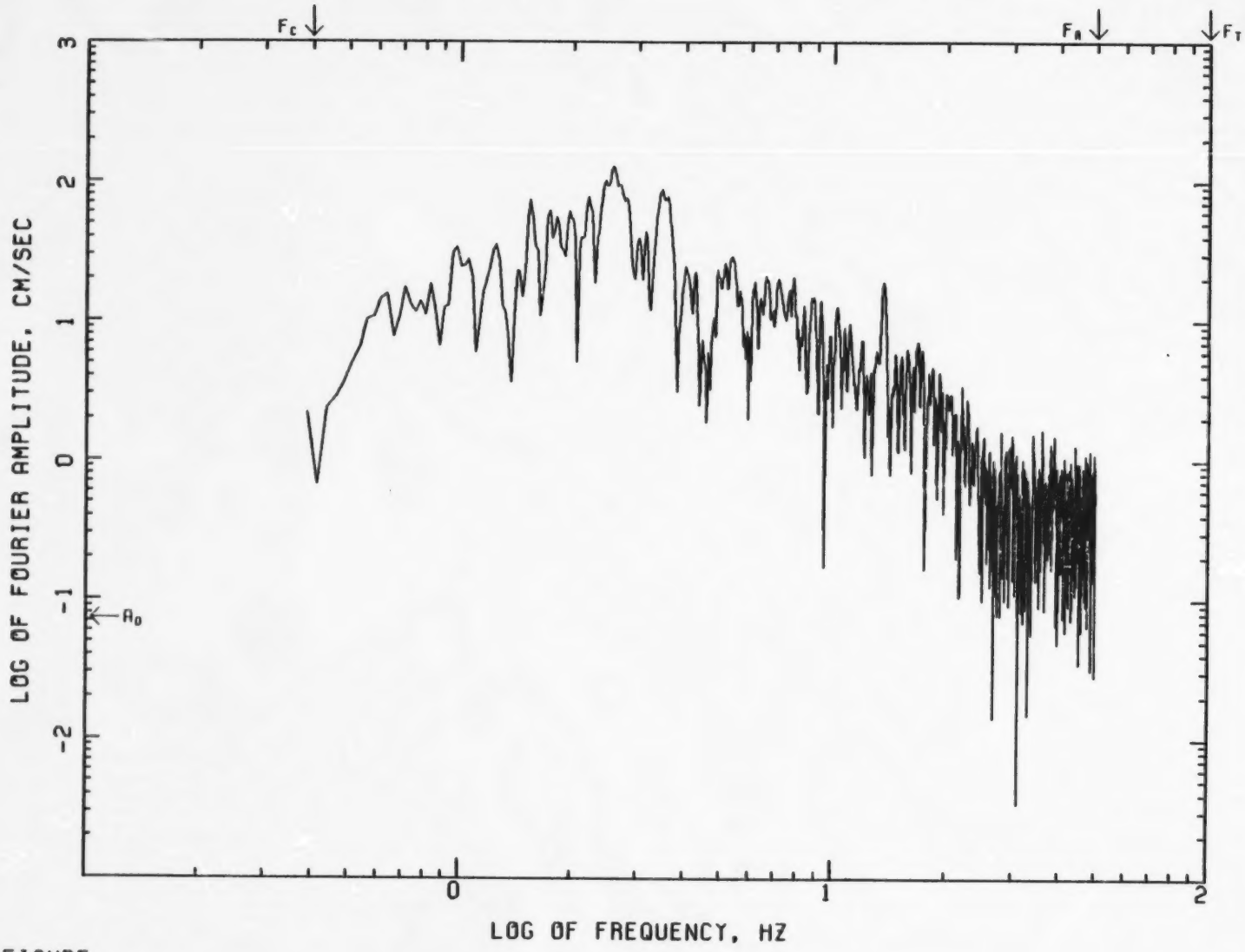
FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, TRANSMITTER HILL (PAD)
360 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, TRANSMITTER HILL (PAD)
UP
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.



FIGURE

LOG-LOG FOURIER AMPLITUDE SPECTRUM OF ACCELERATION.
COALINGA, TRANSMITTER HILL (PAD)
270 DEGREES
EARTHQUAKE OF JULY 9,1983 0740 UTC
BUTTERWORTH FILTER AT 0.40, ORDER 4
DATA BAND PASSED FROM 0.40 TO 50.00 HZ.
COMPUTING OPTIONS= ZCROSS,NONOISE.

APPENDIX II

CURRENT LIST OF PROCESSED RECORDS

USGS processing of records from the USGS permanent network of strong-motion accelerographs and associated networks

Strong motion data from earthquakes 1978* and later.

Table 1. Chronological list of events and associated reports describing the existence/processing/analysis/availability of digital data on tape, or at the National Strong Motion Data Center in Menlo Park.

Date & Time	Earthquake	Reference (see attached list)
January 1, 1975; 0355 UTC	Southern Alaska;	OFR (in review). (Silverstein, 1985d)
March 25, 1978;	Coyote Dam, California	OFR 83-166 (Brady & Perez, 1983)
August 27, 1978 and two later shocks;	Monticello Dam, Jenkinsville, South Carolina;	OFR 81-0448 (Brady & others, 1981)
August 6, 1979;	Coyote Lake, California	OFR 81-42 (Brady & others, 1980)
October 15, 1979;	Imperial Valley, California;	OFR 80-703 (Brady, Perez & Mork, 1980)
October 15, 1979;	Imperial Valley, California;	OFR 82-183 (Perez, 1982)
October 16, 1979, 0706 UTC;	Monticello Dam, Jenkinsville, South Carolina;	OFR 81-1241 (Mork & Brady, 1981)
December 13, 1981 and March 18, 1983;	Solomon Islands;	OFR 85-261 (Silverstein, 1985a)
February 13, 14, and 23, 1983;	Monasavu Dam, Fiji;	OFR 85-375 (Silverstein, 1985b)
May 2 and May 9, 1983;	Coalinga, California;	OFR 84-626 (Maley & others, 1984)
July 9, 1983; 0740 UTC;	Coalinga, California;	OFR 85-584 (Silverstein, 1985c)
July 22, 1983; 0239 UTC;	Coalinga, California;	OFR 85-250 (Silverstein and Brady, 1985)
April 24, 1984;	Morgan Hill, California;	OFR 84-498, Vol I and II (Compiled by Seena Hoose)

*With inclusion of isolated earlier events recently processed.

Table 2. Processed records in each report.

January 1, 1975; 0355 UTC; southern Alaska; OFR 85- (in review)
Records (4): Anchorage, 500 W. Third St., Basement
Anchorage, Alaskan Methodist University
Anchorage, Government Hospital
Talkeetna, FAA-VOR Building

March 25, 1978; Coyote Dam, California; OFR 83-166.
Records (3): Coyote Dam, Ukiah, California: abutment, toe, crest.

August 27, 1978, 1023 UTC and 2 later shocks; Monticello Dam, South Carolina, OFR 81-0448.
Records (3): Jenkinsville, S.C. Monticello Dam
Shared abutment (center crest)
August 27, 1978, 1023 UTC
Two later unidentified events

August 6, 1979, Coyote Lake, California; OFR 81-42
Records (6): Coyote Creek, San Martin, California
Gilroy Array: Station 6, San Ysidro, California
Gilroy Array: Station 4, San Ysidro School, California
Gilroy Array: Station 3, Sewage Treatment Plant, California
Gilroy Array: Station 2, Mission Trails Motel, California
Gilroy Array: Station 1, Gavilan College, California

October 15, 1979, 2317 UTC; The Imperial Valley Earthquake; OFR 80-703.
Records (22): El Centro Array 7, Imperial Valley College, California
El Centro Array 6, Huston Road
El Centro, Bonds Corner, Hiways 98 & 115
El Centro Array 8, Cruickshank Road
El Centro Array 5, James Road
El Centro Differential Array
El Centro Array 4, Anderson Road
Brawley, Brawley Municipal Airport
Holtville, California, Holtville Post Office
El Centro Array 10, Keystone Road
Calexico, California, Calexico Fire Station
El Centro Array 11, McCabe School
El Centro Array 3, Pine Union School
Parachute Test Facility
El Centro Array 2, Keystone Road
El Centro Array 12, Brockman Road
Calipatria, California, Calipatria Fire Station
El Centro Array 13, Strobel Residence
El Centro Array 1, Borchard Ranch
Superstition Mountain, California
Plaster City, California, Storehouse
Coachella Canal Number 4, California

October 15, 1979; The Imperial Valley, California; OFR 82-183;
Records (22): This report contains the time-dependent response spectrum plots for the same records as in OFR 80-703, above.

Table 2. Processed records in each report. (continued)

October 16, 1979, 0706 UTC, Monticello Dam, South Carolina, OFR 81-1214.
Records (1): Jenkinsville, South Carolina, Monticello Dam shared abutment (center crest)

December 13, 1981 and March 18, 1983; Solomon Islands, OFR 85-261
Records (5): Dec. 13, 1981, 0129 UTC: 460 Beach, Panguna Mine, Bougainville Island.
Dec. 13, 1981, 1324 UTC: "
March 18, 1983: Arawa Town
Bato Bridge
BVE80, Panguna Mine.

February 13, 14, and 23, 1983; Monasavu Dam, Fiji; OFR 85-375
Records (3): Feb 13, 14, 23, 1983: Monasavu Dam.

May 2 and May 9, 1983; Coalinga, California; OFR 84-625.
Records (13): May 2, 1983, 2342 UTC:
Pleasant Valley Pump Plant: switchyard, basement

May 9, 1983, 0249 UTC
Anticline Ridge: freefield and pad
Burnett Construction
Oil City
Oil Fields Fire Station
Palmer Avenue
Skunk Hollow
Pleasant Valley Pump Plant: switchyard, basement, 1st floor, roof

July 9, 1983; 0740 UTC; Coalinga, California; OFR 85-584
Records (7): Anticline Ridge: freefield and pad
Burnett Construction
Oil City
Oil Fields Fire Station: freefield and pad
Palmer Avenue
Skunk Hollow
Transmitter Hill

July 22, 1983; 0239 UTC; Coalinga, California; OFR 85-250
Records (12): Anticline Ridge: pad site
Oil City
Oil Fields Fire Station: freefield and pad
Palmer Avenue
Pleasant Valley Pump Plant: 1st floor, basement, roof, switchyard, freefield
Skunk Hollow
Transmitter Hill

April 24, 1984; Morgan Hill, California; OFR 84-498B, Vol. II.
Records (11): Anderson Dam: downstream, crest
Hollister City Hall Annex
Hollister Differential Array
San Justo Damsite: right abutment, left abutment
San Jose 101/280/680 bridge
Hollister Differential Array No. 1, 3, 4, 5

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Brady, A. G., P. N. Mork, Virgilio Perez, and L. D. Porter, 1980. Processed data from the Gilroy Array and Coyote Creek records, Coyote Lake, California Earthquake 6 August 1979. USGS Open File Report 81-42.

Brady, A. G., R. L. Porcella, G. N. Bycroft, E. C. Etheredge, P. N. Mork, B. Silverstein, and A. F. Shakal, 1984. Strong-motion results from the main shock of April 24, 1984, in The Morgan Hill, California Earthquake of April 24, 1984, (S. Hoose, compiler) USGS Open File Report 84-498A, V. I, pp. 18-26.

_____, 1984. Strong-motion results from the main shock of April 24, 1984, in The Morgan Hill, California Earthquake of April 24, 1984, (S. Hoose, compiler) USGS Open File Report 84-498B, V. II, 103 pp.

Brady, A. G., Virgilio Perez, and P. N. Mork, 1980. The Imperial Valley earthquake, October 15, 1979. Digitization and processing of accelerograph records. Open File Report 80-703.

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Maley, R., E. C. Etheredge, D. A. Johnson, J. C. Switzer, P. N. Mork, and A. G. Brady, 1984. Strong motion data recorded near Coalinga, California (May 2, 1983) and processed data from May 2 and May 9, 1983. USGS Open File Report 84-626.

Mork, P. N. and A. G. Brady, 1981. Processed accelerogram from Monticello Dam, Jenkinsville, South Carolina, 16 October 1979, 0706 UTC. USGS Open File Report 81-1214.

Perez, Virgilio, 1982. The Imperial Valley, California earthquake, October 15, 1979; time dependent response spectrum plots. USGS Open File Report 82-183.

Silverstein, B. and A. G. Brady, 1985. Processed strong-motion records from the Coalinga, California, aftershock of July 22, 1983, 0239 UTC. USGS Open File Report 85-250.

Silverstein, Barry, 1985a. Processed strong-motion records from the Solomon Islands Earthquakes of December 13, 1981 and March 18, 1983. USGS Open File Report 85-261.

_____, 1985b. Processed strong-motion records from Monasavu Dam, Fiji; Earthquakes of February 13, 14, and 23, 1983. USGS Open File Report 85-375.

_____, 1985c. Processed strong-motion records from the Coalinga, California aftershock of July 9, 1983; 0740 UTC. USGS Open File Report 85-584.

_____, 1985d. Processed strong-motion records from the southern Alaskan earthquake of January 1, 1975; 0355 UTC; USGS Open File Report (85-).